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AMERICAN
JOURNAL OF SURGERY

VOL. XXXI. FEBRUARY, 1917. No. 2.

RECURRENCE OF GALLSTONES.*

JOHN B. DEAVER, M.D.
PHILADELPHIA, PA.

Every experienced surgeon finds himself confronted with the question of recurrence of symptoms requiring secondary intervention after operation for the relief of gall-bladder or biliary conditions. As in other questions, perhaps a free exchange of views may help toward the solution of this vexed problem.

About 4.07 per cent. of the cases of biliary affections operated upon by me at the German Hospital of Philadelphia were secondary cases, *i.e.*, such as had had one, or two or even more previous operations performed by me or by other surgeons for gallstones or other disorders of the bile passages in periods varying from seven months to seventeen years; the greater number (60 per cent.) required re-operation within one year after the primary intervention.

In a recent publication (*Illinois Medical Journal*, June, 1916), I presented the results of a study of 1031 operations performed in the German Hospital by me from January, 1910, to January, 1916, with a mortality of 7.18 per cent. and 42 recurrent cases in the series. More recent figures (January, 1916, to November 1, 1916) give about the same percentage of recurrent cases, but a somewhat higher percentage of operative deaths. [In 152 operations there were 15 deaths; and eight patients who had had one or two (one case) previous operations upon the gall bladder. The one patient having a history of two previous operations was also the one who had had the longest interval between operations; the first, a cholecystostomy, having been done seventeen years, and the second, a cholecyst-duodenostomy, fifteen years before the present operation.] In addition to the above 1183 operations, I performed 642 operations in the years 1897 to 1909 inclusive, making a total of 1825 operations in my German Hospital service. This does not include the operations done in St. Mary's, St. Agnes, the Philadelphia and University Hospitals, which would make my total considerably over 2,000.

* Read before the Harlem Medical Association, New York City, December 6th, 1916.

The most common cause of recurrence after cholecystostomy in the combined series was stone or stones in the gall bladder (12 cases); adhesions (8 cases), stone or stones in the common duct (6 cases) being next in order of frequency. In the earlier series four of the patients required re-operation after a cholecystectomy, two for stricture of the pancreatic portion of the common duct or the duodenal orifice and one each for stone in the common duct and post-operative duodenal fistula. All the recurrent cases in the later series were after primary cholecystostomy. This would make it appear that cholecystectomy, though the more serious operation, reduces the risk of future gallstone troubles. As I have stated elsewhere, however, under good conditions the mortality figures of the two operations do not greatly differ.

The failure to remove all the gallstones at the primary operation is the most potent cause of recurrence of symptoms. This adds emphasis to the arguments we surgeons are continually bringing forth of the importance of early operation. Kehr, perhaps the greatest German authority on surgery of the gall bladder, does not hesitate to lay much of the blame for recurrent gallstones on the medical man. He points out that in long standing cases the gall ducts become dilated and stones are apt to lodge in the recesses, so that they cannot always be removed or even detected at operation, and they thus give rise to renewed attacks of cholelithiasis. Operation, says Kehr, in cases in which inflammation is limited to the gall bladder, may be postponed for a few weeks or months, but in cholangitis it should be resorted to after a second attack before the ducts have had a chance to dilate. There are of course operators, he says, who fairly court recurrence by their method of operation, but the surgeon who gets a chance to perform an early cholecystectomy and *drains* the widely incised choledochus, is only rarely confronted with a recurrent case. In the matter of free and prolonged drainage of the gall bladder or the common duct, I heartily agree with Kehr. I regard it as the best means of overcoming recurrence and I make it a practice to

use large sized tubes and allow them to remain *in situ* until they practically drop out.

It is not always easy to determine whether these recurrent stones were overlooked at operation or whether they had actually formed again after operation. The impression, however, is strong that re-formation had taken place inasmuch as the number of stones in many of the cases ranged from five or six to several hundred, which could hardly have escaped detection. On the other hand, it is not always possible to clear the two primary branches of the hepatic duct; again, in the attempt to remove a stone or stones from the hepatic duct, one or more may be displaced upward beyond the reach of the surgeon and thus produce common duct obstruction, which in turn requires re-operation. I have had cases in which I have removed muddy, granular material from the gall bladder and have the patients return for obstruction of the common duct. I have also seen cases which required several operations before a permanent cure was established. Here also complete drainage is essential for a cure, and we should not hesitate to open the common or the hepatic duct to secure it.

Other cases in the series showed renewed infection of the gall bladder, or of the bile ducts, or failure to have removed all the infection at the primary operation, as indicated by the presence of acute or chronic cholecystitis, chronic cholangitis, biliary cirrhosis, and pancreatitis at the subsequent intervention. Some of the less common causes of recurrence of symptoms were obstruction at the papilla of Vater, biliary fistulas, internal and external, and interstitial pancreatitis and pancreatic lymphangitis.

Frequently associated with numerous minute stones in the common, the hepatic and the smaller bile ducts, with occlusion of the papilla of Vater, is biliary cirrhosis. For the relief of this condition, which I have frequently met with, only prolonged gall bladder or common duct drainage will suffice to bring about a permanent improvement or cure. That cases of this type can be given as good a chance for improvement or cure by medical treatment, including that given at the various famous springs, to my mind is preposterous. Anyone who has seen and studied the operative findings cannot but agree with me **in toto** in this statement. The medical man, who has seen in a half sort of way, one such case naturally may not be convinced. This reminds me of a remark made by the late Dr. McBurney in discussing a paper on appendicitis, when he said, "Lord deliver me from the man who has had 'a case'." Those of my onlookers who have seen me upon many occasions delve into the primary hepatic ducts and scoop out muddy, sand-laden material, have, with me, concluded that recurrence would surely occur. How any medicine could clear the bile ducts of this material I cannot see, yet these cases are frequently subjected to prolonged medical treatment.

It is well known that the chronic infections beget gallstones while the acute infections, destructive lesions. Chronic cholangitis must be reckoned with in the study of the causes of recurrence of symptoms. Citation of the following case will illustrate this point:

Mrs. ——— at 45 yrs. Recurring attacks of biliary colic with jaundice covering a period of one year, during which time she was treated medically. When I was asked to see her I found her feverish, with accelerated pulse, profoundly jaundiced, suffering constant pain, with enlarged liver and a painful and palpable gall-bladder. I advised immediate operation, which showed an inflamed gallbladder distended with stones and the common and hepatic ducts filled with stones. Gallbladder removed, common duct opened and fifteen stones removed from it and the hepatic duct. With a small scoop many very small stones were removed from the primary hepatic ducts; the papilla of Vater was strictured, necessitating dilatation with graduated probes. Operation consisted of drainage of the common duct. Culture of the bile showed colon bacillus.

The patient made a stormy recovery. Drain removed in eight weeks. Remained well for one year, when she was again the subject of practically the same symptoms as before operation. Second operation showed numerous small stones in the common and hepatic ducts. Again the ducts cleared as well as could be done and common duct drainage instituted. Again recovery, remaining well for a little over a year, when she suffered from an attack of cholangitis that has improved but has not entirely cleared up.

It is too plain what the future of this patient will be. I have advised further operation and drainage of the common duct for an indefinite period. I have one patient wearing a T-tube now over three years, who is perfectly well and will not listen to removal of the tube, having had two previous operations. I have a number of patients wearing these tubes upon whom I have performed the second or third operation; all of the patients are doing their work as they did before being attacked. The majority of the patients are poor women, housewives, and able to attend to their household duties. In this class of cases where the ballbladder can be left I consider drain-

age by way of the gallbladder the best and safest method.

I cite these cases as one of the several causes of gallstone formation. Minute stones imbedded in the mucosa of the gall bladder can be removed only by taking out the gall bladder; this may be unfortunate from the standpoint of the future of the patient.

1916 Gall bladder Operations.

Number of operations	Died.
152	15
Recurrences 8	1

Type of operations.

		Died
Cholecystectomy	93	4
Cholecystectomy & dochostomy	31	6
Cholecystectomy & cystostomy	20	3
Cholecystectomy, cystostomy & dochostomy	2	1
Cholecystectomy, cystostomy, dochostomy & pancreatostomy	1	
Choledochostomy	4	1
Cholecyst-duodenostomy	1	
	152	15

Recurrences after primary Cholecystostomy.

Causes.

Stone in Gall bladder	2
Stone or stones in common duct	1
Adhesions	4
Dilatation of common duct	1
	8
Chronic Pancreatitis	10
Pancreatic lymphangitis	4

In considering the causes of recurrence of gallstones we must necessarily revert to the primary causes of gallstone formation. Although Aschoff and Bacmeister have demonstrated the aseptic formation of the radial cholesterine stones in the gall bladder, they at the same time show that all other gallstones, the complex ones and the cholesterine-pigmented calcium stones, owe their origin to infection and obstruction. To my mind every gallstone is, in the words of Moynihan "a tombstone erected to the memory of the bacterium which lies dead within," and in the words of our lamented colleague, John B. Murphy, an infection sequence. Murphy further states that the cholesterine, which forms 98 per cent. of all gallstones, is the product of dead epithelial cells lining the gall bladder, and the stones by their presence in a more or less infected zone cause a continual deposit of cholesterine, which thus continually increases the number of stones. "until finally, there is the arrest of the micro-organism of a more virulent type, which starts suppuration in the gall bladder." This agrees entirely with the autopsy *in vivo*, which finally is the strongest argument. The internist and the gastro-enterologist form their conclusions from the outside plus laboratory findings, which make their results more or less uncertain. Were it not for the thickness of the abdominal wall between their eyes and the lesions they would be as wise as the surgeon. The infection when distributed over a great area of mucous surface will result in a large number of gallstones, for "as ye sow so shall ye reap."

We all know that infection is carried to the gall bladder in various ways—the portal circulation, the common duct, the lymphatics, the systemic circulation, and by juxtaposition. The selective action of certain virulent bacteria from a distant focus, for example, for the appendix, has been brilliantly demonstrated by Rosenow. My experience, extending over a number of years and comprising practically twelve hundred operations in the last six years for affections of the biliary passages, convinces me that the appendix, in turn, is the focus of infection for nearly all upper abdominal diseases, the gall bladder affections, gastric and duodenal ulcer, pancreatitis, etc. It is hardly necessary for me to dwell on the importance of early removal of even a slightly troublesome appendix in order to avoid future trouble. Nor need I do more than point out that the destructive possibilities of appendiceal infection have no limitations and this may practically be said of infection of the bile passages. From the confusion still reigning with regard to the etiology of malignancy, we are able to gather at least this, that carcinoma is the result of irritation. Ergo, remove the irritation. The fact, also, that 85 to 95 per cent. of primary, and only 15 to 16 per cent. of secondary, carcinomas of the gall bladder are associated with gallstones indicates that gallstones are the cause and not the result of carcinomatous degeneration (Kehr),—another argument that speaks for itself. The further pernicious results of neglected gallstones are seen in myocarditis and kidney degeneration (the two most important factors, in my opinion, in the post-operative prognosis of these cases), as well as in degeneration of the bloodvessels, diabetes, hematogenous infection, etc.

Whether we can avoid the formation and the recurrence of gallstones by a cholesterine-free diet, as recently suggested by Gerster, remains to be seen. As for the practice of sending this class of patients to the various springs for treatment—this appears to me very much like the repentant attitude of the young woman about to undergo an operation, let us say, for gallstones. Before being taken to the etherizing room she turned to her husband, saying, "My dear, if I have done anything to vex or offend you, and I know I have, I want you to forgive me," and in the next breath she

added, "but if I come out of this all right, I'll do it again, I promise you." These patients may come out of their trouble all right for a while, but they're sure to have it again, sooner or later.

Disease of the biliary passages is essentially surgical and not medical, and the most common preventable cause of recurrences is late operation. Until this fact has impressed itself indelibly on the physician as well as on the laymen, we cannot expect to improve our percentage of complete cures of gall bladder and associated diseases.

SOME OBSERVATIONS ON THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER.*

RICHARD A. BARR, B.A., M.D., F.A.C.S.,
NASHVILLE, TENN.

Since the surgery of ulcer of the stomach and duodenum has reached an assured position in the surgical mind, and since thousands of cases of ulcer have been operated upon and observed for sufficient time to determine results, it would seem that the technical features of this work or at least the surgical principles upon which it is based should have been worked out so that there would be practical unanimity of surgical opinion with regard to them. There is still enough variation, however, to prove confusing even to the surgeon trying to get at the heart of the matter, and certainly enough variation in theory, in practice, and in results to justify the doubts that many internists still entertain as to the propriety of ulcer surgery.

Surgical poise is difficult to attain without wide experience, for most of us follow the lead of some one of authoritative position on medical and surgical questions. We do not even take the trouble to go to the bottom of that one authority's opinion. We grasp a few superficial facts, apply them in practice, or see some one else with equally superficial knowledge apply them, and are often left to wonder why we do not get results. This superficial grasp is particularly apt to result when opinions are based upon observation at the big clinics. Epigrammatic statements made by operators whose minds are, or should be, concentrated upon the technical details of the operations they are performing, or about to perform, hardly give comprehensive views of such broad subjects as that of ulcer of the stomach and duodenum, and should the statements be comprehensive few minds can retain, coordinate and judge the many facts or theories included.

The man with limited opportunities for observation in his own practice, and who must perforce base his opinions largely upon the work of others, should always approach the study of such work in the attitude of criticism, and should let no overwhelming series of cases, though they number thousands, overawe his intelligence, and make him accept as facts what may be the mistaken conclusions of a hypnotizing and self-hypnotized enthusiast. It is only by preserving this attitude of criticism, and by studying and comparing the work of many who have had wide experience, that the surgeon with scant resources in the way of clinical material can perfect his judgment sufficiently early to do justice to himself and his patients.

It is natural and perhaps proper, when authorities differ, to follow those whose plans of treatment carry the least surgical risk to patients. Operative recoveries with more or less temporary relief of symptoms have distinct advantages over deaths following complete surgery.

I know no more difficult subject upon which to preserve one's equilibrium than this one of ulcer of the stomach and duodenum. The literature of ulcer of the stomach and duodenum offers great justification to the man who would see in it a condition easily cured by simple and safe surgery. Both text-book and journal authority can be found for this view, but only a little experience is apt to show that there is a somber lining to this rosy-tinted cloud.

The chance for cure of ulcer of the stomach by removal of the diseased area is limited only by the technical difficulties of the situation. This is fact and will hardly be disputed by any one. The cure of ulcer by any less direct method, and the prevention of recurrence, can be assured only by procedures based upon a knowledge of the causation of ulcer or upon an approximately correct guess as to causation.

In these facts lie the kernel of this question of the surgical treatment of ulcer of the stomach and duodenum. Differences of opinion among surgeons are mainly as to the probability of cure by indirect surgery, so to speak. The question is really whether gastro-jejunostomy alone is sufficient or whether something more radical, and with greater operative risk, must be done.

Gastro-jejunostomy is the established indirect surgical method of treating ulcer (though gastro-duodenostomy still gets honorable mention, and

* Read before the Nashville Academy of Medicine, September 19, 1916.

jejunostomy has its field of application), and it has been perfected until it is simple of technic and has an almost negligible mortality in skilled hands.

Direct surgery of stomach ulcer varies from infolding or excision of a small ulcer to partial gastrectomy, the procedure adopted depending on the size of the ulcer and its location. Direct treatment of duodenal ulcer means excision or, what is the same thing if done properly, infolding of the ulcer. Gastro-jejunostomy must often be, and in other cases preferably should be, done, in addition to the direct treatment of ulcers both of the stomach and the duodenum.

Closure of the pylorus is an indirect measure in ulcer of the duodenum, and it has the advantage of being direct to the extent of relieving the first portion of the duodenum of any functional activity, and from all contact with food or acid secretion. Ulcer must be caused by something connected with the digestive processes, but no blame has yet been attached to the secretion of the duodenal glands or to the bile and pancreatic juice. Exclusion of the duodenum, then, must be protective against the formation of ulcer, though it might fail to cure an ulcerative process already inaugurated.

Gastro-jejunostomy, which is used alone as the indirect method of treatment, exerts its influence by allowing either the exit of stomach contents or the entrance of bile and pancreatic juices. Its value for the latter purpose is problematical and the quantity of secretion entering the stomach is variable, being beyond control by any of the ordinary technics for making the stoma. When of decent size and properly located it will perform the first function whenever there is pyloric occlusion, spasmodic or organic, as has been proved to the satisfaction of everybody under many different conditions. There has never been any complaint of unsatisfactory function by a stoma made to take the place of an occluded pylorus. It is equally certain that a stoma is little used by the stomach for emptying itself so long as the pylorus is normal or even approximately so, that is to say, clear of obstruction, either spasmodic or organic.

A stoma made in the presence of a normally functionating pylorus, unless very large, is not used by the stomach, and in the presence of a spasmodic strictures it destroys its own usefulness to whatever extent it relieves the spasm.

These are established facts, and no one will dispute them, though some seem to think they may be ignored in the treatment of ulcer, especially ulcer of the duodenum. Paterson, for instance, says that it makes no difference which way the food goes, that gastro-enterostomy is a "physiological operation" and reduces the acidity of the stomach contents 30% by diminution of the total chlorides secreted, by the entrance of bile and pancreatic juice into the stomach, by the removal of spasmodic stenosis in some ulcers, and by the early stimulation of the pancreatic secretion through the presence of acid in the jejunum with compensatory fall of the gastric secretion.

Paterson and Kocher are the leading advocates of gastro-enterostomy pure and simple in the treatment of all gastric and duodenal ulcers. They are consistent in their practice throughout, but the evidence against the propriety of others following their lead is too clear and too extensive to be ignored.

W. J. Mayo closely follows Paterson on duodenal ulcers and on pyloric stomach ulcers, but finds it necessary to cauterize or resect ulcers of the rest of the stomach. Evidently the gastro-enterostomy is only "physiological" in his experience in those ulcers lying distal to the stoma. Mayo, so far as I can find, does not discuss the action of the stoma. He gets results, and seems to attribute the lack of success in others to ignorance or poor technic.

Moynihan says that in duodenal ulcer in order to get permanent results from gastro-enterostomy the ulcer must be obstructive or the surgeon must produce obstruction. He recommends Rodman's operation in pyloric and antral ulcers unless *obviously benign stricture is present.* He advises resection of ulcers of the stomach proximal to this area, plus gastro-enterostomy, but he does not advise any occlusive procedure to make his stoma permanently effective. This is strange in view of his statement about gastro-enterostomy for duodenal ulcer.

Out of the abundance of my inexperience I have learned that a surgeon can not get results from surgery that appears illogical to him. That illogical surgery will get results for the man to whom it appears logical must be true to some extent, for there are many analogous circumstances in life.

This may explain the fact that gastro-jejunostomy by itself has been disappointing to me in both gastric and duodenal ulcers unless there has been distinct organic stricture in the pyloric region. For some years I have not stopped without doing something definite to the ulcer itself except in two cases of duodenal ulcers with such extensive adhesions, and with patients in such serious condition from

hemorrhage that I did not have the courage to do more than gastro-jejunostomy, and while both these patients were benefited, they both had recurrence of digestive symptoms.

For the last two years my practice has been to perform gastro-jejunostomy for duodenal ulcers, and to occlude the pylorus by submuscular resection of the mucous and submucous coats, resecting the ulcer at the same time if possible.

In gastric ulcer I resect the involved portion of the stomach. This resection is done with separate suture of the mucous membrane whenever possible, and the pylorus is included unless there is too great disproportion between the size of the ulcer, and the area of the stomach that would be removed. I have had no inaccessible ulcers, but would make every effort to resect such ulcers from either without or within the stomach cavity. In all cases, whether the ulcer can be resected or not, where the pylorus is not strictured or resected, the pylorus is occluded and a gastro-jejunostomy, of course, is done. There are cases so extensive that nothing is possible except jejunostomy, but these cases are, of course, in a class by themselves.

No doubt you wonder what I have against the pylorus. The use of the pylorus is unquestionably mixed up with the causation of duodenal, and its disuse as the result of spasm probably with that of gastric ulcers. More than this, a patent pylorus modifies or prevents the good results obtained by a gastro-jejunal stoma.

Closing the pylorus absolutely protects the duodenum, and it insures the continued use and benefits of gastro-jejunostomy. It can be done by submuscular resection with little technical difficulty and little risk. To my mind its routine use is logical. Gastro-jejunostomy is an essential part of the treatment of gastric ulcers. Whatever the function it fulfills, it is performed only when it is used for emptying the stomach. Why not insure its action?

Since adopting this rather radical system, and since adopting the use of separate suture of the mucous membrane I have had complete cures and no deaths, but I have had only a few cases, and those comparatively simple. I recognize the fact that I must necessarily in time get an increased mortality, but I believe by setting our minds to the more serious necessities of ulcer surgery we will improve and master the technical requirements, and this, combined with getting our cases earlier, will enable us to place the mortality so low as to compare favorably with the 1½ to 2% of gastro-jejunostomy.

A PRELIMINARY REPORT OF 45 CONSECUTIVE CASES OF MALIGNANT GROWTHS TREATED WITH X-RAYS.*

JAMES N. McCOY, M.D.,
VINCENNES, INDIANA.

Late methods of treatment and especially the advent of the Coolidge tube offer powerful means of offense against deep-seated cancer, and enable the cancer therapist to combat metastatic growths and even to anticipate and prevent metastasis, by irradiating the lymph glands under suspicion, which can be done without harm to the patient. Perfected technic in the use of the soft rays, makes the cure of superficial cancer a certainty.

Prior to the development of the massive filtered dose technic, however, we were practically helpless when metastasis occurred.

It is my firm belief that perfect team work between the surgeon and the roentgenologist will result in cure of the great majority of cancers. Painful experience leads to the belief that cancer with bone involvement is beyond power of the roentgenologist to cure, and if they be in surgically inoperable locations, it is as well to let them alone. We may also theorize that cancer is incurable either by surgery, or *x*-rays, or both, in the liver and some of the ductless glands.

The 45 cases herewith reported are consecutive cases as to treatment, being all the cases which have submitted to treatment by me within the scope of this report.

When I adopted the massive filtered *x*-ray dose, for deep-seated cancer ("A Technic of the Roentgen Ray massive dose for Treatment of Deep-seated Cancer," McCoy, *Journal of the Indiana State Medical Association*, June, 1915) and the intensive soft *x*-ray dose for superficial cancer ("Carcinoma Cutis and its Cure by Roentgen Rays, a Soft Ray Technic, McCoy, *Interstate Medical Journal*, vol. XXII, No. 7), I determined to offer treatment to all patients of whom there was any possibility of cure, a course I had not theretofore pursued.

The patients ranged in age from 29 to 82; two are 29, but there was no increase in relative frequency until 50 years was reached. The disease proved relatively more frequent at 60 years of age than at any other.

Some conclusions may be drawn in regard to exciting or predisposing causes of cancer.

I would particularly direct attention to cancer

*Read before the Western Roentgen Society, St. Louis, Mo., June 9, 1916.

of the lip and mouth, which has very often been attributed to smoking. Of 95 consecutive cases, some of which were treated and reported herein, 27 were cancer of the lip or mouth. Of the 27 cases, 5 were women and 22 were men. Of the 22 men, 12 had the disease on the lip and 10 within the mouth. Of the 22 men, 11 were smokers, some of whom were very moderate in the indulgence. Of the 5 women, 3 had the disease on the lip and 2 within the mouth. None was a smoker.

Attention is urged, as in previous papers, to the importance of removing warts, moles, nevi and keratoses, and I recommend *x*-rays or the dessication method as the best means of removal.

All of the lesions, with the exception of nevi, can be removed by the dessication method with perfect results. The nevus, however, is best treated by *x*-rays.

Cases are classified as primary, post-operative, recurrent post-operative and metastatic. The term "post-operative" refers to those cases operated upon by the surgeon with a view to *x*-ray treatment, and which were thus treated, immediately after operation. The term "recurrent post-operative" refers to those cases in which surgery was wholly relied upon as a cure, and in which there was a recurrence after operation.

The massive filtered doses used on these cases varied from four to six Holzknecht units, with the reaction pastille near the skin, and the entire filter between it and the tube.

The filters used in these cases varied according to the depth of the cancer. The majority of such treatments were given through six millimeters of aluminum and a layer of sole leather and I have found that such treatment, excluding, as is done, all but the hard rays, produce but a very moderate reaction on the skin, and I have produced in some instances a marked reaction internally, with nothing more than an erythema on the skin. In the cases of superficial malignancy the "intensive soft ray dose" was used with a view to, or in the hope of, causing a disappearance and cure of the lesion with one treatment, in which I succeeded in a number of cases.

Prior to the invention of the modern *x*-ray apparatus which has made modern methods of *x*-ray therapy possible, I treated many cases of skin cancer successfully and had but few failures or recurrences, but at that time I strove for the same physiological effect, that of a first to second degree reaction, by means of the divided dose, that I now try to obtain with one or two treatments. I have learned that there is no evil result to be feared from a second degree reaction, provided it be properly cared for. For purposes of report and consideration by myself, cases are called *cured* when the disease disappears and remains so, after all visible *x*-ray reaction has subsided. It is a uniform practice, however, to require patients to report monthly for observation for one year after *cure* is pronounced. Communication is maintained indefinitely, so far as is possible. I shall be glad to acquaint the medical profession with the further history of the cases. No time limit has ever been or can be established on the recurrence question. To fix a limit would be purely arbitrary. Suffice it to say, from my own experience, that all recurrences I have seen, have came within 18 months.

The doses used varied with the character of the lesions, from Tint IV Sabourraud-Noire, in those lesions which were comparatively flat and of short duration, to 12 Holzknecht units in elevated tumors

Figs. 1, 2. Case 56. Before and after treatment.

and in a melanotic sarcoma of the face. A scar has not resulted in any of these cases.

Biopsy was had in all the deep-seated cases and as many of the superficial ones as possible. It was not had in all superficial cases for three reasons:

First—It is not always possible to secure the necessary fragment, as some patients will not consent.

Second—Biopsy in a typical superficial cancer is useful, only as a matter for report and record, and has no bearing upon the outcome of the case. A basal-celled cancer yields more readily to *x*-ray treatment than a spindle-celled growth, but they both yield.

Third—It is inadvisable to cut into a cancer before *x*-ray treatment, as such interference acts a stimulant to the growth and promotes metastasis. And again, if a specimen is to be procured after treatment, it must be done within a few days following; if too much time elapses, the histological

findings will be markedly altered by the effect of the rays.

CASE 29. Female, age 59; carcinoma, middle of lower lip; a distinct intramural tumor in center of lip; duration one year; there is a history of a precancerous lesion at this location many years prior; no biopsy possible; treated October 29th to December 30, 1913, with a filtered massive dose; cured.

CASE 30. Male, age 63; pirmary carcinoma, left side of face; duration two years; a typical lesion; no biopsy attempted; originated in a keratosis; treated December 6, 1913 to January 6, 1914, with soft ray technic; cured.

CASE 31. Female, age 42; adeno-carcinoma of the cervix uteri and vagina; recurrent post-operative; treatment October, 1913 to Jan, 1914, with the filtered massive dose to which was added some direct exposure with the soft ray technic. This disease was well advanced on the vaginal wall before treatment could be instituted. There was a disappearance of the disease, but it recurred in a form of an abdominal tumor January, 1916. The patient died June, 1916, of abdominal metastasis.

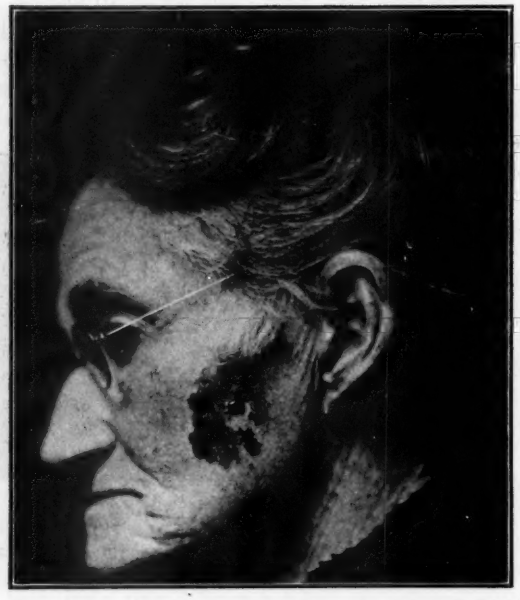

Fig. 3. Case 59. Before treatment.

CASE 32. Male, age 66; post-operative metastatic carcinoma of the glands of the neck; duration one year; secondary to a cancer of the lip which had been treated surgically. The disease then recurred in the cheek and was again operated upon. The condition in question followed this last operation after a period of two months; treated by the filtered massive dose September 27, 1913, to November 20, 1913; cured, but later died of paralysis.

CASE 33. Male, age 72; post-operative carcinoma of penis; duration four years; treated October, 1913, with the soft ray technic without satisfactory results, and as the inguinal glands were involved, the filtered massive dose was administered by both groins, and amputation was recommended, which was done by Dr. V. A. Funk; cured.

CASE 34. Male, age 52; recurrent post-operative carcinoma of the left axilla; duration one year; treated by the soft ray does October and November, 1914; cured.

CASE 35. Male, age 67; primary carcinoma of the mouth and left lower jaw; duration one year; treated by the filtered massive dose September, 1913 to March, 1914; case proved intractable on account of bone involvement and there was a fatal termination, the lower jaw being destroyed.

CASE 38. Male, age 66; primary carcinoma of the left lower jaw; treated September, 1913 to December, 1913, with the filtered massive dose, but on account of the bone involvement, it proved intractable and went to a fatal termination.

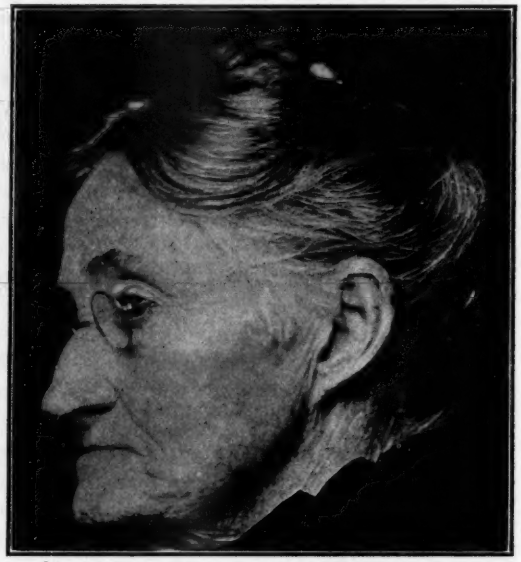

Fig. 4. Case 59. After treatment.

CASE 41. Female, age 65; primary spindle-celled carcinoma of the scalp at the occiput involving the cranial wall; duration one year; occurred at the site of a wound; biopsy by Dr. Williams; treated by the filtered massive dose July, 1914 to November, 1914, without success. There was bone involvement and the patient died.

CASE 42. Female, age 33; post-operative cancer of cervix uteri and vagina; duration two years; the operation was a panhysterectomy, but there was an inoperable extension along the vaginal wall at the time of operation; biopsy by Dr. Williams, Lecturer, but report in detail is not available. She was referred to me immediately after the operation and was filtered with the filtered massive dose July 24, 1914. This patient died of some obscure ailment, August, 1916. No satisfactory cause assigned; profound hysteria suggested; to be conservative, we will assume she died of metastatic cancer.

Case 47. Male, age 32; primary carcinoma of the nose; duration six months; no biopsy allowed; originated in keratosis; treated by the soft ray dose June 20, 1914; cured.

Case 48. Male, age 52; primary carcinoma, right side of the face near the nose; duration one year; a typical lesion; no biopsy; origin a mole; treated by the soft ray dose October and November, 1914; cured.

Case 49. Male, age 62; primary carcinoma on the face below the eye; no biopsy; appeared at the site of a bruise; duration one year; treated by the soft ray dose February and March, 1914; cured.

Case 50. Female, age 44; primary rodent ulcer of middle frontal region; duration three years; no biopsy attempted; origin not determined; treated by the soft ray dose December 7, 1914; cured.

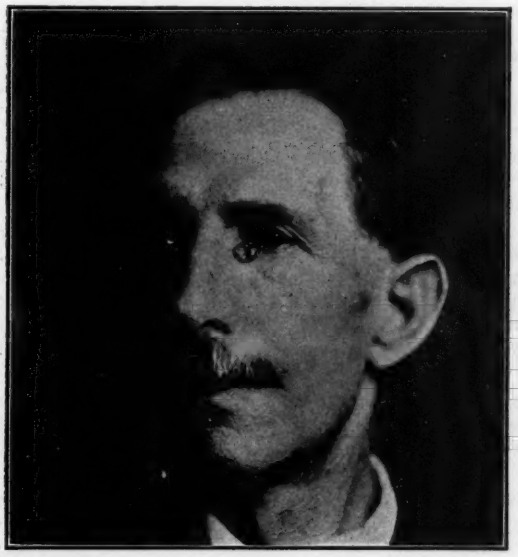

Fig. 5. Case 68. Before treatment.

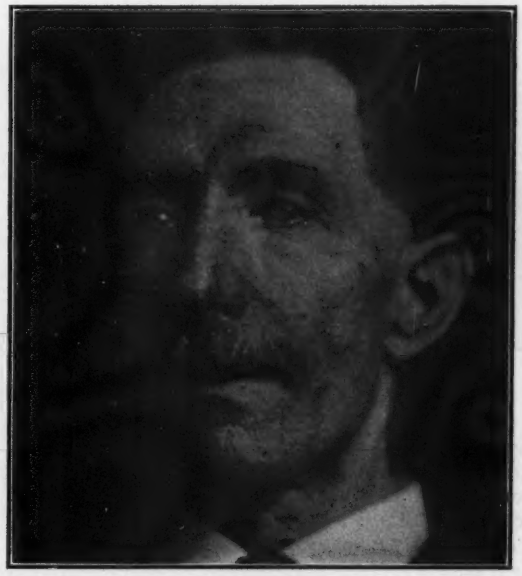

Fig. 6. Case 68. After treatment.

Case 51. Male, age 65; primary carcinoma, left side of the neck; duration two years; origin not determined; no biopsy allowed; treated by the soft ray dose September and October, 1914; cured.

Case 52. Male, age 60; recurrent post-operative cancer of left side of cheek and nose; duration of disease six years; duration of recurrence two months; treated August 24, 1914, with the intensive soft ray dose; cured.

Case 53. Male, age 65; primary carcinoma, muco-cutaneous margin of the lower lip; no biopsy required; duration nine months; treated June 24, 1914, with the intensive sofe ray dose; cured.

Case 54. Male, age 60; primary carcinoma of the left side of lower eyelid; duration two months; biopsy was not deemed advisable; origin not determined; treated with the soft ray dose September and October, 1914; cured.

Case 55. Female, age 64; primary rodent ulcer of the left side of lower lip; duration two months; origin not determined; biopsy not attempted; treated with the soft ray dose July 8, 1914; cured.

Case 56. Male, age 72; primary carcinoma of left side of the face near the ear; duration four years; origin not determined; a typical lesion; no biopsy attempted; treated with the soft ray dose October and November, 1914; cured. (Figs. 1 and 2.)

Case 59. Female, age 49; melanotic sarcoma of the left cheek; duration not determined, because the lesion originated in a pigmented mole; biposy was not deemed advisable; treated with the intensive soft ray dose January, 1915 to May, 1915; cured. (Figs. 3 and 4.)

Case 60. Male, age 60; recurrent post-operative cancer of the left lower jaw; secondary to cancer of the lip duration (recurrence) three months; treated with a filtered massive dose February 24th, 1915; there was a distinct bone involvement and the patient died.

Case 61. Female, age 54; primary superficial carcinoma of the back; duration three months; origin not determined; biopsy not allowed; treated with the soft ray dose; January 13, 1915; cured.

Case 63. Female, age 51; primary carcinoma left side of the nose; duration 18 months; origin not determined; a typical lesion; biopsy not desired; treated with the soft ray dose April 27, 1915; cured.

Case 64. Female, age 39; postoperative recurrent medullary carcinoma of left breast, axilla and elbow, manifest as a recurrence in the skin of the breast, with enlarged glands in axilla and elbow; duration four years; biopsy by Dr. Williams; tumor of the right breast was operated; first operation, April, 1913; metastatic tumor in left breast was operated November, 1913; this operation was a simple amputation of the breast and there was

a recurrence in the left exilla in January, 1915, which was operated upon in May, 1915; treated with the filtered massive dose June 24, 28, and July 21, 1915; cured.

CASE 66. Male,, age 47; primary spindle celled carcinoma on back of the head near the neck; duration two years; origin not determined; biopsy by Dr. Curtner; treated with the soft ray dose July 27, 1915; cured.

CASE 67. Female, age 47; post-operative spindle-celled carcinoma of left breast; duration six months; at time of operation the tumor was broken down; the operation was a simple amputation of the breast; biopsy by Dr. Williams; treated July 28 and 29, 1915, with filtered massive dose; cured.

CASE 68. Male, age 58; primary carcinoma inner canthus of the left eye; duration three years; origin not determined; a typical lesion; biopsy not advisable; treated with the soft ray dose August 3 and September 1, 1915; cured. (Figs. 5 and 6.)

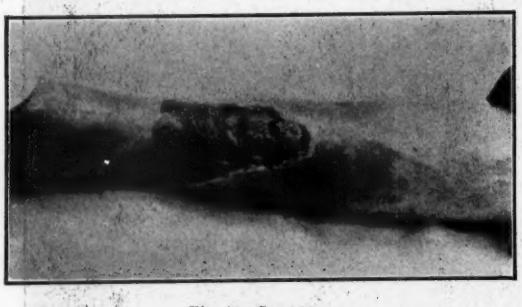

Fig. 7. Case 73.

CASE 69. Female, age 38; recurrent post-operative myxo-sarcoma in region of right parotid gland; duration several years; biopsy by Dr. Williams; treated with the filtered massive dose August and September, 1915; cured.

CASE 70. Male, age 63; primary carcinoma of right buccal surface following leukoplakia; duration ten months; treated with the filtered massive dose September and October, 1915; this patient died of angina pectoris before final discharge.

CASE 71. Male; age 53; primary basal-celled carcinoma of left ear and surrounding region; duration 12 years; origin not determined; biopsy by Dr. Williams; one intensive soft ray dose administered September 15, 1915, after which he discontinued treatment. (Photograph.)

CASE 72. Male, age 63; post-operative metastatic enixed cell melanotic sarcoma of the left side of the neck, involving and attached to the external jugular vein and extending to the infraclavicular region; duration three years; biopsy by Dr. Williams; resected by Dr. V. A. Funk, who referred him to me for post-operative treatment; biopsy by Dr. Williams. The surgeon warned me that he would suspect recurrence in the infraclavicular region as he believed that he was not able to get low enough to dissect all the diseased tissue; case was treated with massive filtered dose as soon as the wound closed; in September, 1915, the entire neck was irradiated including the aural and the infraclavicular region. At this time there was a metastatis in front of the ear and a recurrence back of the ear; there was no evidence of a recurrence in the infraclavicular region; cured.

CASE 73. Male, age 67; an extensive stratified squamous cell carcinoma of the right anterior tibial region; biopsy by Dr. Williams; duration several years; occurred at the site of an injury; had metastatic involvement of the inguinal glands; treated September and October, 1915, with the soft ray dose and the entire inguinal regions irradiated with the massive filtered dose; inguinal involvement subsided and all evidence of cancer disappeared but the extensive tibial lesion was never closed. (Fig. 7.)

CASE 74. Male, age 46; primary carcinoma of the right side of the neck; duration three years; origin not determined; a typical lesion; biopsy not sought; treated with the intensive soft ray dose September 23, 1915; cured.

CASE 78. Male, age 79; primary carcinoma on the cheek near the eye; duration three months; origin a keratosis; there was history of very rapid growth and biopsy was not deemed advisable; treated with the soft ray dose September 30, 1915; cured.

CASE 80. Female, age 59; post-operative endothelial sarcoma of the right side of the chest; involving intercastal muscle and subcutaneous region at 8th and 9th ribs; biopsy by Dr. Williams; duration several years; treated with the filtered massive dose October and November, 1915; cured.

CASE 81. Female, age 50; primary carcinoma left side of the nose; duration four months; origin keratoses; biopsy was not deemed advisable; treated with the soft ray dose October 21, 1915; cured.

CASE 82. Female, age 60; post-operative cubaidal celled carcinoma of the cervix uteri; there was an inoperable extension of the diseases along the vaginal wall; biopsy by Dr. Williams; duration one year; treated in November, 1915, with the massive filtered dose; cured.

CASE 83. Female, age 63; post-operative recurrent carcinoma on the left side of the face near the eye; duration three years; origin keratoses; biopsy not thought advisable; treated with the soft ray dose November 19, 1915; cured.

CASE 84. Male, age 73; primary carcinoma of the nose between the eyes, also on the right cheek; duration of the first lesion three months; of the second lesion one and one-half years; origin of both lesions keratoses; typical lesions; biopsy not allowed nor deemed advisable; treated by the soft ray dose December 30, 1915; cured.

CASE 86. Male, age 77; primary carcinoma of the right side of the face; duration one year; origin not determined; lesion typical in character; biopsy not allowed; treated by the soft ray dose January 27, 1915; cured.

CASE 87. Male, age 58; recurrent post-operative carcinoma of the lower lip; duration of recurrence six months; lesion was treated by the soft

ray dose and the entire jaw was irradiated by the filtered massive dose January 28, 1916; cured.

Case 88. Male, age 67; primary carcinoma (malignant wart of the dorsal) surface, left hand; duration one year; treated February 15, 1916, with the intensive soft ray dose; cured.

Case 91. Male, age 50; primary spindle-celled carcinoma left side of the nose; duration nine months; origin not determined; biopsy by Dr. M. L. Curtner; treated by the soft ray dose; cured.

Case 92. Male, age 42; primary, basal-celled carcinoma of the left cheek near the eye; duration one year; an elevated tumor, beginning to break down in the center; biopsy by Dr. Williams; treated by both the soft ray and filtered massive dose February 23, 1916; cured. (Figs. 8 and 9.)

Fig. 8. Case 92. Before treatment.

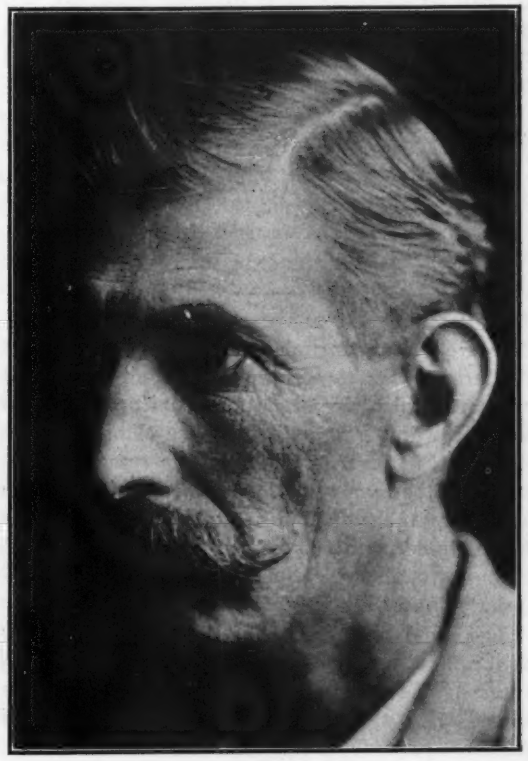

Fig. 9. Case 92. After treatment.

SUMMARY.

Of sixteen cases of deep-seated cancer, nine were successfully treated; one died of another disease before discharge, and six cases ended fatally, in four of which there was cancerous involvement of bone. There has been recurrence of the disease in two cases, which has ended fatally. The remainder of these cases are alive and with no recurrence or metastasis.

Of twenty-eight superficial cancers, twenty-seven have been cured and one discontinued treatment. There has been no failure or recurrence in this class. Twenty-eight cases were primary, ten were recurrent post-operative and four metastatic. Fourteen most recent cases, all of which have resulted in apparent cure, have not been included in this series for the reason that permanency of the cures might be questioned. This summary is revised to date of this writing.

CONCLUSIONS.

1. In view of the success of Roentgen therapy in deep-seated cancers, and constant improvement in technic, the prospect is quite encouraging.

2. There is no prospect of cure of cancer when there is involvement of bone.

3. Cancer metastatasis, formerly an insuperable obstacle in cancer treatment, can now be successfully treated, if it can be located. There is, in regard to this, abundant chance for errors in judgment.

4. Deep-seated cancers should be operated upon and the operation should be followed by massive dose *x*-ray treatment as soon as the wounds close, *whether there be recurrence at the time or not.* The roentgenologist and the surgeon should both be magnanimous and disinterested enough to accept any possible assistance in behalf of humanity. The two agents should be allies, in the war against cancer.

5. Surgery in superficial cancer is worse than

useless. This class of malignancy can be successfully treated by *x*-rays alone, and surgery here is not an aid to roentgenology. I believe that when good surgeons become well acquainted with this phase of the question, that they will join the roentgenologist in classing this with other things known as useless surgery.

6. I am not unaware of the pessimism of the medical profession at large with regard to the recurrence of cancer after operation or other treatment. It will be admitted that sufficient time has not elapsed to warrant assurance of cure of these cases to the satisfaction of the profession. This has therefore been entitled a preliminary report.

ABDOMINAL HERNIA AND "RUPTURE."

(Standardization of Nomenclature.)

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Most authors favor the elimination of the term "rupture" from surgical nomenclature. Insofar as the term applies to hernia at the inguinal, femoral and umbilical orifices it is quite uniformly agreed that the word "rupture" should be eliminated. Is there not, however, some legitimate reason for restraining the term to designate those defects in the continuity of the abdominal wall remaining or subsequently occurring at the site of a laparotomy incision through which abdominal contents subsequently protrude?

The standard definition of true hernia, certainly as it applies to the inguinal, femoral and umbilical types of the disease, is now quite uniformly accepted, as, "a protrusion of a pouch or sac of parietal peritoneum." The essential structure, therefore, entering into the formation of true hernia is a sac of parietal peritoneum. Strictly speaking this is the only structure necessary to fulfill the definition of hernia. With this as a definition of the term no explanation is required for the fact that a patient has hernia even though recumbent and the sac empty, though, of course, the sac may contain bowel, omentum and other abdominal contents when intra-abdominal pressure at these orifices is increased by erect posture, coughing, straining, etc.

Concerning the etiology of this type of hernia, the whole subject has been sufficiently clarified by extensive clinical and library research and the sum and substance of this research clearly and convincingly expressed in at least three editorials written by Walter M. Brickner in the AMERICAN JOURNAL OF SURGERY, in June, September and November, 1915. The views expressed in these editorials must certainly be acceptable as the expression of standard belief. True hernia is essentially congenital in origin and a hernial sac is as much a malformation as is the sac of meningocele (cerebral or spinal) or that of a branchial or coccygeal cyst. To my class in the Medical College of Virginia I have taught this for five years as a substandard belief. Since the appearance of the editorials by Brickner, there need be no hesitation in expressing in positive terms the etiology of hernia of the abdominal wall. From a study of many thousands of herniae of these orifices and the performance of operations and witnessing operations at the hands of other surgeons in many hundreds of herniae, I have never seen one case in which there was any evidence at operation that such hernia was of traumatic origin. Moreover, while it seems reasonable to believe that coughing, straining, heavy lifting and other such efforts may possibly cause such herniae to become larger (certainly it becomes larger and gives the impulse when coughing), yet I am quite willing to go on record with the belief that such factors are not truly causative of herniae.

Concerning incisional, ventral or, if one please, "traumatic hernia," we have a different state of affairs. In these there is no protrusion of the pouch of parietal peritoneum. Frequently when such "herniae" are of long standing, operation will reveal to superficial examination, an appearance somewhat resembling peritoneum, though as a matter of fact, there is no true peritoneal sac as an essential part of the pathology of this type of hernia. There is a true solution of continuity or rupture of the abdominal wall, the hole extending through the abdominal wall from the peritoneal cavity completely or incompletely through to beneath the skin. This type of "hernia" follows operation for intra-abdominal conditions that necessitates drainage at the time of operation; or it develops at the site of wound which, as a result of infection, have broken down; and in certain rare cases, there is separation of the edges of the peritoneum or fascia as a result of improper apposition or the breaking of sutures before the union has become firm. In other words, this type of "hernia" is truly a rupture of the abdominal wall. In cases requiring drainage the rupture exists at the site of the drainage tube or gauze when the patient leaves the operating table. In cases due to separation of structures, the rupture occurs while the patient is in convalescence, though the protrusion may not be visible to the patient or easily

detectable to the examiner until some months later after tissue shrinkage has occurred.

At least for the present, therefore, it seems not altogether unjustifiable to retain the term "rupture" for so-called post-operative incisional herniae. This belief is further substantiated by the standard methods for the cure of this affection. It is now uniformly agreed that the most essential part of the operation for the cure of hernia of the inguinal, femoral and umbilical orifices, consists in the complete removal of the sac by enucleation and firm closure of its neck by high ligation or suture. Though it is standard practice to close at least the inguinal canal and perhaps the femoral, and by overlapping to obliterate the umbilical orifice, yet it has been demonstrated, at the Mayo clinic and elsewhere, including a few cases in my own practice, that in certain small herniae a tight closure of the neck of the sac from the inside of the general peritoneal cavity (especially when preceded by inversion of the sac by means of forceps pulling it up from the bottom), there will be no recurrence even though the canal is not closed. We would certainly, however, not trust solely to this without closure of the canal in herniae other than those of small size.

Concerning incisional rupture, however, the standard practice and the only way to avoid recurrence is to unite accurately the separate layers of the abdominal wall, the peritoneum and internal fascia generally in one layer, the muscle and external fascia in separate layers and to overlap these layers as much as possible. This under perfect asepsis and hemostasis, provided the sutures are not made so tight as to strangulate the tissues, results in permanent cure. In contra-distinction to the standard methods in dealing with true hernia with its sac of parietal peritoneum, no effort is made to remove the peritoneum and indeed all tissues capable of union should be preserved. So that the essential difference in the practice for the cure of true hernia and "rupture" is based upon the differences in the pathology of the two affections. Hernia is cured by excision and high ligation of the sac; rupture by accurate coaptation most certainly secured by overlapping the various layers of the abdominal wall. With these differences in etiology, pathology and treatment, may we not retain both hernia and "rupture" in nomenclature and standardize their definitions?

There ought to be no great difficulty in distinguishing a hydrocele of the cord from a hernia. The translucency test will help, if in doubt.

CARCINOMA OF THE MAMMARY GLAND IN A GIRL OF 12 YEARS OLD.

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This patient was brought to my clinic at St. Joseph's Hospital for examination and possibly operation on November 15, 1912.

The family history, so far as it could be obtained, was negative. Two or three months before I saw her this girl had noticed a lump in her right breast. It was described as being a little larger than a hickory nut and was the site of some pain. As it did not disappear, the mother took her to a physician who kept her under observation for a few weeks, during which time he thought the lump was increasing in size. She was then brought to my clinic.

The growth was then a little larger than an English walnut. It was situated beneath and a little below the nipple, which was retracted. The growth was hard, irregular in outline and did not move except with the surrounding tissues. It was not attached to the skin nor to the pectoral fascia. It did not seem to be encapsulated. The axillary glands were not enlarged. From its physical characteristics it was thought to be malignant and excision was advised. This was consented to and carried out the same day. The growth was removed by two curvilinear incisions which passed about an inch from each border and included the nipple. After excision the growth was turned over in the palm of the hand and an incision made through it from the back. It was seen to be non-encapsulated, grayish white in color, had an irregular border and was invading the surrounding tissues. The axilla was not opened, the wound was closed by a few silkworm-gut sutures. Barring a slight infection the wound healed kindly. Up to this date so far as known there has been no return.

The growth was passed over to the pathologist of the hospital, Dr. Daniel Hopkinson whose report follows:

"Section No. 1. The section contains a stroma composed largely of mature fibrous connective tissue greatly increased in amount, the glandular elements being very few and widely separated. These glands are lined by a single layer of cuboidal epithelium; in the walls of the glands within the subepithelial tissue are proliferating round cells. This section presents the histology of a *fibroma.*

"Section No. 2. In this section there is also an increase in stroma with areas of myxomatous change. The glandular elements are, however,

more numerous than in section No. 1, there is also some hyperplasia of the lining epithelium, many of the glands and ducts containing several layers of cells. The lumina of some of the glands are dilated, with a tendency of cyst formation. This section presents the histology of a *fibro-cyst-adenoma.*

"Section No. 3. This section contains a very small amount of stroma within which the epithelial elements are arranged in the form of irregular shaped masses, their line of demarcation from the surrounding stroma often being difficult to determine. In some areas the epithelium forms distinct glands lined by several layers of cells, denoting the glandular origin of the epithelium forming the nests of cells which invade the stroma. This section presents the histology of a *glandular carcinoma.*"

Figures 1, 2 and 3 are drawings from microscopical section of the tumor. It is interesting in this connection and also instructive to know that different sections of the growth presented entirely different characteristics. Sections from the exterior of the tumor indicated a fibroma. More centrally situated sections were like an adeno-fibroma and in places like an intercanalicular growth, while sections near the center were distinctly carcinomatous. This is important in showing that sections from different areas of a doubtful growth should be examined as they present very different characteristics.

At the time of operation this girl was 12 years of age and stated that she had not menstruated. I think, however, from the well developed condition of her breasts that she was bordering on puberty.

Bland Sutton says that cancer of the breast never manifests itself before puberty and seldom before thirty. This is one of the few cases that have been reported of carcinoma of the breast occurring before puberty and I believe none, so far as I have examined the literature, have been reported as occurring under 12 years of age. The increasing number of reported cases of carcinoma in children and young adults should lead us to be not too positive in excluding carcinoma and epithelioma in children.

I have gathered from the literature and from my own practice the following cases of carcinoma in children, the great majority of which were attested carcinomatous after microscopial examination by competent pathologists. This list makes no pretense of being complete and as a rule the cases were reported during the past 10 or 15 years. Besides the following cases I have operated upon a girl of 17 years with carcinoma of the rectum and on a child aged 4, with a large adenocarcinoma of the ovary.

Carl Stern (*Deutsche Med. Woch., page* 494, 1892), under the title "Zur Kenntniss Maligner Neubildungen in Kindesalter," has gathered from the German literature and from his experience in Marien Hospital, Düsseldorf, the following cases occurring in children.

1. Carcinoma of the knee in a new born child, which conformed in microscopical structure to a uterine carcinoma of the mother.
2. Carcinoma at the tip of the nose in a new born child.
3. Uterine carcinoma in a girl of 8 years.
4. Carcinoma of the liver, congenital.
5. Carcinoma of the liver, congenital.
6. Carcinoma of the ileum in a boy of 13 years.

Fig. 1.

7. Carcinoma of the liver in a boy 12 years.
8. Scirrhus carcinoma of the small bowel in a boy of 3½ years.
9. Carcinoma of the stomach in a 5 weeks' old child.
10. Carcinoma of the sigmoid leading to stricture in a boy of 9 years.
11. Adenocarcinoma of the rectum in a girl of 11 years.
12. Carcinoma in an ovarian cyst in a girl of 15 years.
13. Carcinoma of the stomach in a boy of 14 years.
14. Carcinoma of the rectum in a child of 12 years.

R. Scholz, Breslau, has recorded three cases of carcinoma of the stomach in persons under 10 years.

Röhrer, in his monograph "Das primäre Nieren carzinom" observed 115 cases of which one-third were under 10 years of age.

Schoenig saw two cases of carinoma of the rectum of girls of 17 and collected thirteen additional cases from the literature.

R. C. Grulee in *Surgery, Gyneocology and Obstetrics,* 1906, reports a case of adenocarcinoma of the rectum in a girl of 16 years. He collected from the literature two additional cases of cancer of the rectum in children ranging from 12 to 18 years.

Wm. A. Edwards, *American Journal of the Medical Sciences,* vol. 138, 1909, tabulates the following cases of carcinoma of the ovary in children which were reported by the following writers.

Doran, 7 months, fetus cancer of the ovary.

Majorlin, child 1 year, cancer of the ovary.

Weil, child 5 years, adenocarcinoma of the ovary.

Parry, child 7 years, carcinoma of the ovary.

Fig. 2.

Olshausen, child 8 years, carcinoma of the ovary.

Stolpinsky, child 8 years, carcinoma of the ovary.

Gussenbauer, child 8 years, carcinoma of the ovary.

W. H. Sharp, child 8 years, carcinoma of the ovary.

Leopold, child 9 years, carcinoma of the ovary.

Palmer, child 9 years, carcinoma of the ovary.

Smith, child 13 years, carcinoma of the ovary.

Thorton, girl 15 years, carcinoma of the ovary.

Vonszabo, girl 15 years, carcinoma of the ovary.

Michel, girl 16 years, carcinoma of the ovary.

Binaud, girl 17 years, carcinoma of the ovary.

Stephen, two cases of carcinoma of the uterus in girls under 5 years.

Pick, carcinoma of the cervix in a child of 2 years.

Leidlcy, child 2 years, six months carcinoma of the cervix.

Homans, child 10 years, carcinoma of the addominal organs.

Gynghofer, child 8 years, carcinoma of the cervix.

Wells, child 13 years, carcinoma of the uterus.

Coppie, girl 18 years, encephaloid carinoma of the uterus.

Little, child 14 years, carcinoma of the cervix.

Tschap, girl 19 years, carcinoma of the uterus.

O. L. Castle, Kansas City, *Surgery, Gynecology and Obstetrics,* vol. 18, 1914, reports a case of primary carcinoma of the liver in a child of 10½ years. He has gathered from the literature of 42 cases of cancer of the liver in children, the youngest 1 day and the oldest 16 years.

Schlangenhofer, Vienna, 1902, reports a case of chorio-epithelioma in a child of 13 years.

Ehlfald reports a case in a girl of 17 years.

Fig. 3.

Champneys reports a case in a girl of 18 years.

Ward reports a case of epithelioma of the vagina in a girl under 20.

Fowler reports a case of carcinoma of the rectum in a boy of 15; also a mammary carcinoma in a girl of 17½ years.

Bryan reports a case of a boy 14 years, 8 months old who was struck with a golf ball in the right breast. After six months, pain occurred and a hard node formed. This was excised and the pathologist reported adenofibroma with distinct scirrhus carcinoma in scattered areas of active cell proliferation.

Bryan, *Boston Medical and Surgical Journal,* 1897, says that Blodgett reported a case of carcinoma of the breast in a boy of 12 years.

Gardner & Cummins report a case of carcinoma of the prostate in a lad of 17 years, *California State Journal,* 1914, page 79.

"The occurrence of neoplasms in the young," by Alfred Scott Warthin, of the Pathological Laboratory of the University of Michigan (*Archives of Internal Medicine*, vol. 15, 1915). Report based on an analysis of 2,000 cases of malignant neo plasms, records:

Child 11 years, squamous cell carcinoma of the leg.

Child 14 years, squamous cell carcinoma of the mouth.

Child 14 years, carcinoma of the stomach.

Child 14 years, adenocarcinoma of the umbilicus.

Child 14 years, basal cell carcinoma of the eye.

Child 15 years, adenocarcinoma of the ovary.

Child 15 years, medullary carcinoma of the ovary.

Child 18 years, basal cell carcinoma of the eye.

Child 18 years, colloid carcinoma of the colon.

Child 19 years, me-astatic carcinoma in cervical lymph nodes.

Child 19 years, squamous carcinoma in cheek.

Child 20 years, carcinoma of the intestine.

Child 20 years, scirrhus carcinoma of the stomach.

Van Buren Knott, reports a case of a child of 11 years with carcinoma of the ovary. *Journal A. M. A.* vol. 64, 1915.

Ward reports a case of epithelioma of the vagina in a girl under 20.

J. R. C. Canney, reports a case of carcinoma of the stomach in a boy of 19. *British Medical Journal*, 1911.

R. Buccheri reports a case of epithelioma of the kidney in a girl of 3 years. R. Krieves, *Geniralis Decheria*, Paris, 1911.

Czrney, adenocarcinoma of the rectum in a boy of 13 years, *Muenchener, Med. Woch.*, 1896.

ARTIFICIAL DILATATION OF THE CERVIX IN LABOR.

First among the practices which should be condemned as meddlesomeness are attempts to cut short the period of dilatation of the cervix. As already explained, indeed, as every accoucheur knows, the only way to dilate the cervix safely is nature's way. Manual dilatation always tears the cervix. Colpeurynters often do so, and almost invariably, if traction is put on them, and in addition, they pull the cervix downward while the uterine action pulls it upward. Overstretching and dislocation of the cervix result, and gynecologic and urologic disease follows. Furthermore, danger of infection attends all these maneuvers, no matter how aseptically the operation is carried out.—JOSEPH B. DE LEE in *The J. A. M. A.*

CONSERVATIVE SURGERY OF THE EXTREMITIES. REPORT OF A CASE.

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Conservation of the resources of a country, its forests, soil, productivity, water power, mines, animals, and its energy-producing forces of all kinds is a great civic duty. Equally binding upon our profession is the duty of conserving and restoring, when impaired by disease or injury, the inborn qualities and capabilities of the human body. Before condemnation it is our duty to make every effort to restore an injured organ, a damaged limb, or an impaired function, not alone from a surgical point of view, but from a socio-economic one as well. Before resorting to destructive or obliterative cures, by means of amputations, excisions and side-tracking, we should endeavor to restore the injured limb, protect the diseased organ, or tide over the disabled function in its emergency.[1]

Not many years ago it was the almost universal custom among surgeons to amputate for crushing injuries of the extremities, especially where the muscular and nervous as well as the osseous tissues had sustained extensive damage. It is perhaps fortunate for humankind that the oscillating pendulum of surgical thought has recently gravitated in the opposite direction, and that former pessimistic radicalism has been largely replaced by optimistic conservatism in practically every department of surgical endeavor. There can be no reasonable doubt that, under the older and more radical methods of procedure, important structures were in many instances sacrificed that might have been saved by the practice of intelligent conservatism.

So brilliant are the results of operative procedures, so easily and rapidly are they executed, and so certain of success are we in hitherto unapproachable surgical projects, that the temptation of a dazzling expedient at the expense of the patient's future is often too great for most of us to resist. Amputation is the greatest reproach to modern surgery; to destroy a function or to remove organs or limbs is a confession of weakness; mutilation is a further confession of our inability to restore diseased tissues or to save what is left of injured functions. The preservation of damaged tissues, organs, limbs, or impaired functions of the human body is a much more difficult proposition. Restoration of function, without the employment of operative measures, occurs oftener than the ultimate surgical statistics as recorded would seem to indicate. Time, patience, more intimate acquaint-

ance with problems of human physiology and pathology, better understanding of the capacity of tissues to resist destructive processes, better estimation of the local or general vitality of structures in a given human being, will help to produce a better outcome in each special case. Laboratory findings, research work, and its possible eventualities should appeal to us more than the attractive, interesting and brilliant purely surgical successes. In spite of the tediousness, the harrassing and disagreeable details, and the many other objections in looking after a protracted case, it is a much more satisfactory result to save a badly damaged leg or arm than to lose it even by the best surgical methods, no matter how quickly or successfully the amputation may be performed, or how perfect the local effect may be.[1]

In the struggle for existence the economic aspect of conservative operative procedures is also entitled to most serious consideration, and the trend of modern surgery is along lines of tissue conservatism, anatomically and physiologically. The removal of a limb reduces the earning capacity of the individual; the amputation of a leg or an arm in a laborer means not only that the sufferer himself is reduced to poverty or crime, but if he be the bread winner of a family, all of those depending upon him become more or less dependent upon charity; they become a burden upon the taxpayer and the state. Every amputation represents a certain loss in the earning capacity of the community in which that person lives. It means a higher rate as well as a larger number of cripples and paupers. Surgery has failed in its duty to the state if it rushes precipitately into mutilating operations, i. e., until every effort has first been made to conserve or restore the individual parts or functions. The object of this may possibly be obtained; aside from the knife, by seeking assistance from the laboratory studies and the modern discoveries for the prevention of infection, as by improvement in the patient's resistance by the formation of anti-bodies, by the use of various sera or vaccines, or by inhibiting bacterial growth. On the other hand, operative surgery is always to be resorted to in time to save life and health. Radical measures are always to be employed when indicated, and it is to be remembered that what might look to the lay mind like brutal and precipitate destructive activity, to the surgical intelligence may be the very highest attainment of conservatism.[1]

If one thoroughly understands the nerve and blood supply of an extremity, and appreciates the fact that so long as a part has a sufficient blood supply it will live, then many structures may be conserved which otherwise would be sacrificed. A knowledge of the anastomoses between bloodvessels, which are particularly large and most numerous in the limbs, is of great importance in this respect, as amputation may be avoided or at least much less of an extremity removed if the surgeon feels certain that an adequate blood supply is present or will be established.[2]

The condition of the nerves is an important feature to be determined when one has been injured, but unfortunately a satisfactory conclusion cannot always be reached. Temporary numbness following an injury may be oftentimes misleading; not infrequently the day after injury sensation will be present which was not observable at the time or shortly after the accident. As a rule the pulse can be detected unless destruction of the artery has occurred above the point where pulsation is sought; but this is not always true, and "sometimes the pulse will not be discernible until several hours after the accident." The condition of the muscular structures is of less importance than that of the circulatory, osseous and nervous elements.[3]

The following recent case seems sufficiently interesting to warrant detailed report. It furnishes an excellent illustration of the results which may be secured in extensive crushing injuries by the intelligent application of modern conservative surgical principles:

E. L. B., aged twenty-seven, brakeman on a freight train, fell from his car while it was in rapid motion. The car wheel passed over his left shoulder and upper third of the arm, almost severing the latter from his body. The spine of the scapula and the coracoid and acromion processes were crushed into many pieces. The clavicle was fractured in its outer fourth, the upper third of the humerus was broken into many pieces, the soft tissues over the shoulder were a contused, lacerated and almost shapeless mass. From a point just above the anterior part of the axillary space, the tissues extending backward into the axilla were practically destroyed, leaving nothing in the axilla except the artery and vein. The median nerve was severed near its two roots, and protruded from the wound three or four inches among shreds of lacerated muscular and glandular axillary tissues. The muscular structures on the anterior surface of the upper third of the arm were ground into a pulpy mass, leaving the arm hanging by skin and fascia, a few of the outer muscles, and the axillary vein and artery. The radial artery was pulsating.

Acting under the dictum which I long ago accepted as the proper procedure in dealing with mutilated extremities, viz., that no primary amputation should be performed upon any of the extremities where circulation is present distal to the injury, I determined to try to save the arm. The crushed pieces of humerus were removed, leaving the periosteum, where possible, from a point at the junction of the middle with the upper third to

within two inches of the head of the bone; the latter was intact in its cavity, and about two inches of the shaft remained.

The proximal end of the severed median nerve was then located, and the distal portion of the nerve protruding from the wound was brought upward, the two ends being united by several fine sutures. All disintegrated tissues were removed, and where possible severed muscles and tendons were united. The wound was freely drained. The soft structures healed rapidly, and the patient has since remained perfectly well.

There has been no reproduction of bone in the upper part of the arm, but union of the fractured scapula and of the clavicle has been satisfactory. The patient has perfect sensation in the entire arm and forearm, and has excellent use of the latter. By holding the arm and bracing it with the opposite hand where the bone was removed, he can flex and extend the elbow very well.

I plan to transplant into the injured arm a piece of bone from the patient's tibia, and I trust in that way to be able to make him an arm which will be functionally serviceable.

(1) Bissell: International Journal of Surgery, 1912, xxv, 169.
(2) McKinley: Journal Fla. State Med. Assn., 1915, ii, 68.
(3) Pritchard: International Journal of Surgery, 1914, xxvii, 59.

Training the Young Surgeon.

So much time is necessarily spent by the surgical staff in performing operations and treating wounds, that the more refined methods of diagnosis and observation which are more easily and more generally practiced in the medical wards are often neglected. The surgeon is frequently called on to treat a localized physical condition which is perfectly patent and which demands prompt operative relief; hence his characteristic habit of making a snap diagnosis, a method which, for surgical purposes, is often singularly effective. An abscess may advantageously be opened, or a hemorrhage successfully controlled, without an exhaustive inquiry into the patient's family history, and without the performance of searching clinical tests. The habit of rapid diagnosis may, however, be carried too far. Certainly it tends to preclude the more careful, deliberate, and thorough investigation which is often essential to the correct diagnosis of obscure or complicated pathological conditions, and which is more likely to be practiced by the visiting staff, and therefore learned by the intern, in the medical wards. . . . The beginner should not be plunged too quickly into the alluring atmosphere of the operating room, where all the conditions favor quick decision and action, but should first be trained thoroughly in diagnostic investigation, an art which attains its highest development in the medical wards.—S. S. Goldwater, in *The Modern Hospital.*

THE SO-CALLED "GONORRHEAL HEEL."

A SEMI-CRITICAL COMMENTARY.

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With the realization that I shall most likely be adversely criticized for presenting this commentary, the following introductory remarks abstracted from an editorial in the Interstate Medical Journal (December, 1916) seems decidedly *apropos:* "By a peculiar weakness of human nature, people generally think too much about the opinion which others form of them. It is difficult of understanding why one should feel so pleased that other people have a good opinion of him, or say anything flattering to his vanity. If you stroke a cat, it will purr; and, as inevitably, if you praise a man, a sweet expression of delight will appear on his face, even though the praise be a palpable lie. What exists in the consciousness of other people should become a matter of indifference when we realize how superficial and futile are most people's thoughts, how narrow their ideas, how mean their sentiments, how perverse their opinions, and how much of error there is in the most of them; when we learn by experience with what depreciation a man will speak of his fellow when not obliged to fear him, or thinks what is said will not reach his ears. And if ever we have had an opportunity of seeing how the greatest of men will meet with nothing but slight from half a dozen blockheads, we shall understand that to place great value upon what other people say is to pay them too much honor!"

While the remark that "it is better not to know so many things than to know so many things which are not so," is accredited to a distinguished humorist long since deceased, it may be aptly applied to certain present-day observations in relation to medical and surgical practice. The four "F's"—fad, fancy, fallacy and fanaticism—in connection with the diagnosis and treatment of various clinico-pathologic disorders afflicting the *genus homo,* have become so numerous that the mere mention of them without specific comment would fill a volume. However, the scope and intent of this dissertation, being limited to the presumed relationship between Neisserian disease and the development of extoseses upon the calcar pedis, preclude consideration of other fallacies which might prove equally interesting.

The statements of text-book authors and others to the contrary notwithstanding, the observation is pertinent that the etiology of local congenital or acquired osseous developmental errors—including

exostoses, ecchondroses, osteophytes, bony spurs, ridges, etc.—in any anatomic situation, still remains submerged in apparently hopeless obscurity. No hypothesis thus far suggested seems sufficient to explain the fundamental cause of the hypernutrition which induces overgrowth and distortion of the osseous structure, although the traumatic or irritative theory appears the most reasonable and has much to recommend its general acceptance.

The present prevailing idea that the so-called spurs or osteophytes occasionally discovered by accident or otherwise upon the os calcis might owe their origin to invasion of the Neisserian diplococci, seems to have been originally advanced by Jacquet (1892), who suggested the designation "pied blennorrhagique" as being appropriate to represent such departures from normal osseous conformation. Nobl (1903 apparently confirmed the findings of Jacquet, and based upon the clinical histories of a limited number of patients emphasized the contention that the ubiquitous germs of Neisser were the probable causative factors. Since then numerous case records (purporting to be genuine) have appeared in orthopedic and urologic literature.

One author records a series of cases under the euphonious superscription of "gonorrheal exostosis of the os calcis," in some of which there appeared little recent or remote evidence of Neisserian disease, nor was it possible to isolate the characteristic diplococcus from body fluids or tissues submitted to bacteriologic investigation, culture, etc. The author freely admitted that in only one instance "was the organism obtained in pure culture," yet *mirabile dictu* claimed that in each the exostosis owed its origin to Neisserian disease!

In a larger series of cases recorded by another author, the Neisserian diplococci were demonstrable in only one. In some instances microorganisms "morphologically similar" were found, which merely illustrates the fallacy of laboratory findings reported by immature and inexperienced bacteriologists. It really seems the height of absurdity to place any credence whatsoever in such laboratory reports; a thousand things might be "morphologically similar"—an expression too frequently employed to shield the ignorance of the bacteriologist and in an attempt to mystify the uninitiated.

Quite recently there were reported before a local medical organization four clinical cases in which existing exostoses upon the os calcis as demonstrated by roentgenoscopy* were presumed to owe their origin to Neisserian disease, the only apparent reason therefor being that the patients were then or had previously been the subjects of so-called "urethritis, gonorrhea, or blennorrhea!" In the discussion which followed, one gentleman stated that such cases must be quite common, as he had encountered fourteen during the last few years; another vigorously disputed the assertions made by the reporter, and unequivocally denied the existence of so-called "gonorrheal heel!"

It may be worthy of note that according to the observation and experience of one of the most distinguished surgeons Kentucky has ever produced (the late Dr. Ap Morgan Vance), no definite relationship between Neisserian disease and spurs or osteophytes upon the calcar pedis has ever been positively demonstrated; he stated to me (1915) that he had never encountered an instance where osseous excrescences upon the os calcis could be even remotely attributed to the presence of Neisserian disease; that he had surgically removed many such excrescences, and the majority of the patients had never been the subjects of Neisserian disease. Based upon his experience, he concluded, therefore, that when present the two lesions must be regarded as merely coincidental and without definnite relationship.

The claim that "painful heel" due to the presence of spurs or osteophytes upon the os calcis may in any instance be correctly attributed to invasion of the Neisserian diplococci, seems infinitely more fallacious than the contention of a rather famous eastern urologist that "a peculiar burning sensation" involving the plantar surfaces of the feet and "recurring daily at exactly four o'clock P. M.," constitutes an invariable characteristic and pathognomonic clinical sign of prostatic disease. Verily, "the possession of a little medical knowledge is oftentimes an exceedingly dangerous thing!"

Brief notes of the four cases of so-called 'gonorrheal heel" reported in Louisville are interpolated merely to emphasize certain apparently fallacious contentions: It was claimed it had been definitely established that three types of osseous lesions might result from "gonorrheal" infection: (a) "simple periostitis, (b) hypertrophic osteoperiostitis, and (c) osteomyelitis." There appears some uncertainty as to when and by whom these facts were

*In this connection, it seems pertinent to remark that surgical intervention predicated upon röentgenoscopic diagnosis of "spur" involving the os calcis, has not infrequently been the source of much chagrin to the operator. While according to the evidence afforded by the röentgenographic plate a "bony spur" existed upon the calcar pedis, yet none was discovered when the heel was incised. The explanation is obvious, i. e., the röentgenologist mistook the shadow produced by the normal tubercle of the os calcis for an extraneous bony excrescence. Mistakes of this character suggest that even the röentgenographic findings are sometimes distinctly fallacious, and greater care should be exercised in the appplication of this valuable method of diagnosis. It must not be forgotten that the angle at which the exposure is made may either exaggerate or minimize the object reflected upon the radiographic plate.

"definitely established," and it is a source of serious regret that the reporter failed to offer further evidence.

The clinical observation was accorded emphasis that the presence of Neisserian disease was demonstrated in each case. In three the urethral discharge was proven "gonorrheal"; in the fourth, "gonococci" were isolated from the prostatic excretion. In none was any heel pain noted prior to the attack of "gonorrhea"; in three, "gonorrheal" arthritis existed in addition to the exostoses upon the os calcis—in one of the latter the wrist and knee were implicated, in the second the wrist and shoulder, and in the third the wrist only. Both heels of one patient were involved; one also had typical "gonorrheal" iritis. Two patients with exostoses "had been in the hospital some time under ordinary treatment for gonorrhea"—including stock vaccines and phylacogens—without the production of permanent benefit; under autogenous vaccines they had improved, but were not completely relieved. Surgical removal of the exostoses had not been undertaken in any of the cases.

In the majority of the recorded instances (purporting to be genuine), according to the clinical history, the heel pain usually became localized at the tubercle of the os calcis, it developed during or following an attack of Neisserian urethrorrhea, and the presence of exostoses or osteophytes was demonstrated by röentgenoscopy. However, strange as the observation may appear, in some instances the patients complained of no heel pain until long after subsidence of the original disease, yet the attempt is made to maintain the obviously fallacious contention that the osseous lesions owed their origin to invasion of the Neisserian diplococci! Could anything more ridiculous and "far-fetched" be imagined?

In severe "heel pain" produced by exostosis upon the calcar pedis, it would be unreasonable and irrational to expect permanent benefit to accrue from any method of treatment not having for its object surgical removal of the offending osteophytes. Certainly, insofar as elimination of the osseous excrescences may be concerned, the administration of vaccines, phylacogens, etc., will accomplish about as much as might be anticipated from the exhibition of similar measures to restore the amputated portion of an arm or leg! Moreover, seminal vesiculectomy for the cure of the so-called "gonorrheal heel," which certain authors have recently attempted to popularize, should be condemned as an extreme exhibition of surgical fanaticism, its *raison d'etre* being about equal to the colectomy of Lane for the cure of goiter, of mammary epithelial hyperplasia, or of a papillary excrescence upon the cutaneous surface of the proboscis!

Where exotosis upon the os calcis is sufficiently extensive to require treatment, a satisfactory result in the majority of instances may be secured from surgical intervention. Recurrence is not unknown after removal, probably from persistence of the original causative factor, whatever it may have been. The suggestion seems reasonable that recurrence may occasionally be due to trauma incident to the operative procedure, but such an eventuation must be rare, else recurrence would be noted with greater frequency.

While I make no pretense to being ultra-scientific, nor do I claim the possession of unusual knowledge concerning the subject under consideration, yet based upon existing information the following fundamental academic propositions appear incontrovertible:

(1) That the terms gonorrhea (i. e., a flow of semen), blennorrhea and blennorrhagia (i. e., a flow of mucus), urethritis (i. e., inflammation of the urethra), gonococcus (i. e., semen berry), as at present almost universally employed, are totally inexact, inexpressive and fallacious, and should be eliminated from medical nomenclature;

(2) That likewise the word gonorrheal (i. e., belonging or relating to gonorrhea), wherever and however used, is distinctly erroneous, hence the expressions gonorrheal heel, gonorrheal exostosis, gonorrheal arthritis, gonorrheal iritis, etc., etc., are ridiculous and absurd;

(3) That "gonorrheal exostosis of the calcar pedis" literally interpreted would be equivalent to saying that the afflicted individual had a flow of semen from the os calcis producing an outgrowth of the osseous structure, and most assuredly the rankest fanatic in the world will agree that this would be an anatomic, physiologic and pathologic impossibility;

(4) That it has never been definitely demonstrated that the Neisserian diplococci are capable of inciting hypernutrition with consequent exostosis or osseous outgrowth in any anatomic situation, although systemic invasion of these microorganisms is frankly admitted;

(5) That even were it possible to isolate the Neisserian displococci from osseous excrescences excised from the calcar depis or elsewhere, the causal relationship would by no means be thereby established, since exostoses have been encountered with greater frequency in patients not the subjects of Neisserian disease;

(6) That the occurrence of osteophytes or exostoses upon the os calcis or elsewhere during or fol-

lowing an attack of Neisserian urethrorrhea is absolutely no proof of a necessary existing relationship, and to attribute the former to the malevolent influence of the latter is merely an expression of ignorance upon part of the observer;

(7) That it has not been shown that exostoses or osteophytes in situations other than the calcar pedis ever occurred from invasion of the Neisserian diplococci, nor has it been demonstrated that these microorganisms possess an elective or selective affinity for the os calcis, as inferentially contended by certain authors;

(8) That it appears strange that examination of the literature reveals no recorded instance of exostosis upon the calcar pedis in a female where any definite relationship was claimed between the osseous lesion and Neisserian disease, although it is well known other tissues embraced within the female organism are not exempt from the ravages of the diplococci of Neisser, in some instances there being infinitely greater structural damage than in the male;

(9) That even admitting the premise that: (a) "periostitis, (b) hypertrophic osteoperiostitis, and (c) osteomyelitis" may be due to invasion of the Neisserian diplococci, the production of exostoses or osteophytes (i. e., new osseous formation) still remains unexplained; the pertinent fact cannot be ignored that during and following the inflammatory lesions mentioned osteohelicosis rather than osteogenesis almost invariably ensues;

(10) That, finally, "gonorrheal heel" is equally as inexpressive and unintelligible as hematogenous kidney, acute abdomen, chronic appendix, and a thousand other not dissimilar diagnostic and anatomico-pathologic fallacies.

Renal Tuberculosis.

To diagnose a certain lesion one must bear in mind the probability of its existence, and the main reason here for the failure of an early diagnosis of renal tuberculosis is the fact that the general practitioner will not be divorced from the old belief that he is dealing with a cystitis, since all symptoms of renal tuberculosis point to the bladder. In the early stages repeated, careful microscopic examination of the urine will aid materially in the diagnosis. If after repeated search of a catheterized specimen of the patient's urine the tubercle bacilli cannot be found, a guinea pig should be injected to verify or refute the suspected diagnosis. In case the outcome is positive, every practitioner knows that 90 per cent. of urinary tuberculosis begins in the kidney, and he should now advise the patient the exact means for localization of the diseased focus.—Oliver Lyons, in *Colorado Medicine.*

AN UNUSUAL CASE OF JACK-STONE VESICAL CALCULI.*

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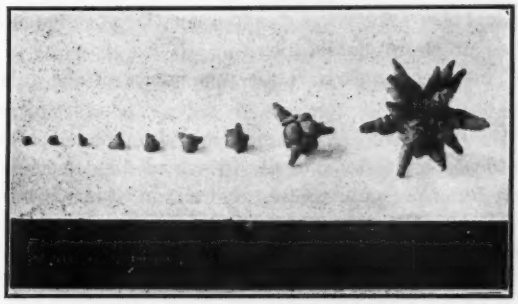
Newark, New Jersey.

Jack-stone calculi are of such rare occurrence that this case seems worthy of mention. On March 10, 1916, a man 84 years old was admitted to the service of Dr. Samuel E. Robertson in St. James' Hospital with the following history: "For several years past he had a gradual difficulty in



urination with marked frequency, every hour, day and night, saying that he was sure he never completely emptied his bladder, passing only an ounce or two at a time. No burning upon urination. No hematuria. Two days before admission to the hospital he had retention which was relieved by catheterization and the contents of his enormously distended bladder completely emptied, which was followed soon after by bleeding. The bleeding became so active and the clots so large that he was unable to void at all, and the introduction of a large sized catheter brought forth nothing but bright red, bloody fluid.

In the hospital he came under Dr. Robertson's care and I saw the case with him. The patient was in such bad shape by this time that it was decided to insert a retention catheter through a canula suprapubically; but in several hours, although he had improved somewhat physically, we could see that the drainage tube was not large enough to admit of passage of the clots and that we were draining off only the fluid collected in his bladder and not diminishing his distention; so a suprapubic cystotomy was performed and two

*Read before the American Urological Association, St. Louis, Mo., April 19, 1916.

handfuls of blood clots evacuated from his bladder. In removing these clots the fingers in the bladder felt some sharp pointed objects which were removed. They proved to be calculi of the jack-stone variety, nine in number, and showing practically all the genesis of formation. The accompanying illustration is a reproduction in actual size. The largest stone has sixteen spicules projecting from it, while the smallest shows a few very slight elevations or protuberances. Examination showed them to be composed mostly of oxalates, with some urates and blood pigment. The stones were very dark, greyish brown in color.

As far as could be learned, this patient never evidenced any symptoms of vesical calculi, and the large amount of residual urine which he must have had for years afforded an excellent place for their growth. At the operation it was found that his vesical obstruction was due to a very large pedunculated prostatic middle lobe.

This case emphasizes the importance of the following points:

1. It is a dangerous procedure to completely and suddenly empty by catheter an over-distended bladder, for it not only creates a condition of shock but it also involves the risk of producing active hemorrhage, as happened in this case.

2. In these cases of prostatic obstruction where there are retention and enormous distention and the introduction of a large catheter brings forth only an ounce or so of bright red fluid, one can feel reasonably sure that active bleeding is going on and that repeated catheterization or even the introduction of a retention catheter suprapubically will not be sufficient to evacuate the large clots; and, therefore, it is imperative to do a suprapubic cystotomy, remove the clots and insert a large enough drainage tube.

3. When you have your fingers or hand in the bladder always explore it for stone, even though the patient never evidenced symptoms of stone.

Thyroid Disease and Septic Tonsils.

Thyroid disturbances, including typical Basedow's disease, are associated with septic tonsils so often and show in some cases such marked improvement in all the symptomatic conditions after tonsillectomy and adenectomy that the relation of cause and effect is proved as more than a suspicion. And persistent thymus with status lymphaticus has been demonstrated in so many instances as associated with the need of tonsillectomy that coincidence does not satisfactorily explain it.—Wm. S. Tomlin in the *Indianapolis Medical Journal.*

Prostatectomy.

The occasional surgeon, or the surgeon unacquainted with the science of urology other than as it crosses his path in the operating room, does not need to discuss the disputed questions concerning obstruction at the neck of the bladder due to prostatic hyperthrophy or distortion. To this sort of man a complete examination of the patient is not necessary. All that he needs to know is that there is an obstruction at the neck of the bladder, that it is probably due to an enlarged prostate, and that it can be removed surgically.

If he is lucky his patient will survive his operation, with the chances of more or less permanent disability. This is sufficient for some men. To others of us who have passed through the developmental stage of prostatic surgery, who can look back upon an uncontrolled hemorrhage, the unexplained death of some patients whose good general appearance lured us into a state of false security, we feel that we need a great deal more information in order that we may know beforehand what to expect in a given case and to choose, if may be, the safest course to pursue under the circumstances.—Paul Pilcher in the *Boston Medical and Surgical Journal.*

Nitrous Oxide-Oxygen Anesthesia.

Nitrous oxide-oxygen has a field of usefulness to which it should be strictly limited. It can be used for very brief operations, as it has been for many years in the extraction of teeth. It is also probably the safest anesthetic to use, as suggested by Ochsner, in cases of acute pulmonary congestion, or of acute nephritis. With these exceptions, which make its field a very limited one, nitrous oxide-oxygen should be looked upon as the most dangerous anesthetic that can be used, even in the hands of the most experienced.—J. F. Baldwin in the *Medical Record.*

The Bone Graft.

At the present time the bone graft is undergoing the same abuses as did the Lane plate a few years ago. It will be overdone and abused, and it will probably not be long before we see some of the symptoms of reaction coming from different parts of the country. The bone graft is subject to the same surgical and mechanical laws as apply to the different methods of internal fixation, and if the surgeon cannot or will not master these laws under which he has to work, it would be better for him to leave this branch of surgery alone.—M. E. Preston in *Colorado Medicine.*

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WALTER M. BRICKNER, M.D., F.A.C.S., Editor

New York, February, 1917.

THE RECURRENCE OF GALL-STONES.

Of much interest will be found the article in this issue, on the Recurrence of Gall-stones, by John B. Deaver, based on an experience than which few surgeons, living or dead, have had larger.

Recurrence of symptoms, requiring a second operation, developed in a little over 4% of his cases. What is especially significant, it seems to us, is that most of these recurrences (and in his latest, tabulated, series, *all* of them) were in patients in whom *cholecystostomy,* not cholecystectomy, had been performed. Secondary operations were required in some cases for adhesions, but in most cases for stone; and in 60% of the cases the secondary operation was required within one year after the first. We are quite prepared to accept Deaver's conclusion that in the majority of these cases the stones were not new formations but had merely been overlooked at the first operation.

This study adds another convincing argument to the desirability of the primary removal of the stone-bearing gall-bladder. Comparatively few are the anatomically and physiologically normal gall-bladders containing stones that give symptoms. Even those that appear thus normal at operation might better be removed, in our opinion; and, as a rule, all the others should be. A gall-bladder sick enough to be operated upon is too sick to be left in. There are, of course, cases in which exceptions should be made to such a rule, viz., in the occasional aged patient and in the very debilitated individual, where only the minimum surgical shock should be inflicted; in the presence of a long-established cholemia; in certain cases where *prolonged drainage* is desirable, provided that drainage of the ducts through the gall-bladder is not made impossible (as it often is) by stricture at the bladder neck. In the hands of an inexperienced surgeon, too, a cholecystectomy may be fraught with grave dangers, and for him cholecystostomy is much the wiser course. For the experienced abdominal surgeon, however, the removal of the gall-bladder, albeit by no means always a simple procedure, possesses no difficulties beyond his technical skill.

As Deaver repeats, "Under good conditions the mortality figures of the two operations do not greatly differ." We are inclined to believe that the greater mortality of cholecystectomy which some surgeons emphasize as an argument in favor of primary cholecystostomy is attributable, in part at least, to the technic employed. If a straight vertical incision is carried up to the costal margin itself; if the gall-bladder (emptied, if need be, by aspiration) is seized with an ovarian ring clamp and, with much of the liver, is thus dragged out of the wound; if the cystic vessels then exposed to view or to touch are at once tied; if, after protecting the field with packings, the visceral peritoneum is incised from the cystic duct to the bladder fundus, and the serous envelope is peeled back, the gall-bladder can be thus removed bloodlessly, with perfect surgical toilet (with no raw liver surface requiring tamponade), and, as a rule, no drain will be needed other than a small tube led down *to* the ligated duct to provide against leakage or *into* the open duct when biliary drainage is planned. With such technic the mortality of cholecystectomy, in our experience, is very small. To be sure, this method cannot be pursued when dealing with gangrenous gall-bladders and in other cases where the physical conditions make it inapplicable. But by whatever method the gall-bladder is removed by experienced surgeons, the mortality of the operation is not high; and if we include in the figures for cholecystostomy the deaths following secondary operations made necessary by the failure to remove the gall-bladder primarily, the mortality of cholecystostomy may be found to be even higher than that of cholecystectomy in the larger clinics!

Secondary operations on the bile tract are most often made necessary by symptoms produced by a diseased gall-bladder left *in situ,* and by those arising from a stone or stones also not removed at the primary operation. As important, therefore, as

the radical treatment of the gall-bladder condition is the determination that the ducts are free from concretion. For this mere palpation, which is important, is usually not sufficient. The cystic, hepatic and common ducts should also be explored with a large probe or sound or small scoop—into the primary branches of the hepaticus and *well* into the duodenum. If the duct does not admit the sound or if, being dilated, it may permit the sound to pass by a stone, it should also be split open. Occasionally the hepaticus is crowded with small stones or bile sand. In such cases, especially, this duct should be freely drained; and Deaver points out an important lesson in urging the need of *prolonged* drainage in some cases of duct lithiasis.

We must be prepared to recognize, however, that, in a fortunately small number of cases, there is a re-formation of stones after a complete operation. These may form in the ducts (or gall-bladder after cholecystostomy). We incline to believe that in some cases they originate in the liver.

Deaver, with others, regards *infection* as the etiology of cholelithiasis, and surely infection plays an important rôle. It seems to us, however, that there are other potent factors. Precipitation of the inorganic salts of the body occurs elsewhere, *e. g.*, in the urinary tract, in individuals having recognizable metabolic diatheses. Lime salts precipitate in certain necrotic tissues without infection. The peculiar deposit of lime and other mineral salts that is so often found under the inflamed subdeltoid (subacromial) bursa in or about the supraspinatus tendon, is not produced by infection. Biochemical disturbances are probably also, in part at least, responsible for gall-stones. The studies of Henes, Rothschild and others have shown that cholelithiasis is usually associated with a hypercholesterinemia. Typhoid fever is generally given as a frequent cause of gall-stones but, in our experience, very few patients with cholelithiasis have had typhoid infection. Gall-stones are much more common in women than in men, and in many cases the symptoms are referred, in origin, to a pregnancy. During pregnancy the cholesterol content of the blood is much increased!—W. M. B.

THE PEACE OBLIGATIONS OF COMMISSION IN THE OFFICERS' RESERVE CORPS, MEDICAL SECTION.

In a recent editorial on "The Medical Reserve Corps and the Officers' Reserve, U. S. A." (THE JOURNAL, December, 1916) we called attention to certain obligations, in times of peace, assumed by those accepting commissions in the Officers' Reserve Corps of the U. S. Army, as stated in the act of Congress creating that reserve corps and in a circular issued by the Surgeon-General under date of September 30, 1916.

Since that editorial was published there has been issued for the Surgeon-General another circular, dated November 1, 1916, which interprets the obligations referred to more liberally and makes them largely voluntary.

Lest our December editorial discourage some of our readers who may have contemplated applying for commission in the Medical Section of the Officers' Reserve Corps, we quote from the second circular the following passages, most of the italics being our own:

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL.
November 1, 1916.

To the Officers of the Medical Reserve Corps:

As there seems to be some misunderstanding as to the obligations assumed by officers of the Medical Reserve Corps in transferring to the Medical Section of the Officers' Reserve Corps, the following memorandum in addition to letter of September 30, 1916, is forwarded. . . .

3. Up to the limit of appropriations officers of the Reserve may be ordered to attend camps of instruction for fifteen days each calendar year. This may be interpreted as follows: *The Medical Department will follow the same plan as was followed in the case of the Medical Reserve Corps, i. e., circularize the Corps, and send to camps of instruction only those who express the desire to go.* The circular will give the location of the camps and the training periods. *Officers will be requested to select such training period as they may desire.* Orders will then be issued for the period selected.

4. Officers of the Medical Officers' Reserve Corps, are expected to take the Correspondence Course. This is desirable as the course covers in its four years the subjects of administration, camp hygiene, the duties of a medical officer, and other requirements with which a medical officer should be familiar. But *for those officers who are prominent in the profession, who are specialists, as surgeons, internists, pathologists, etc., who would in time of war be assigned to duty as specialists or for duty at base hospitals, the course is not an essential,* but for any officer who is to perform field duty, it is essential he should complete the four courses provided.

The same applies to field training and attendance at the camps of instruction. *Both the correspondence course and the work in camps of*

instruction are considered highly desirable, but are not compulsory.

5. In time of peace no officer above the grade of first lieutenant can be ordered into active duty, and no first lieutenant can be ordered to active duty *without* his consent. The provision limiting active duty to first lieutenants does not apply to camps of instruction.

6. In time of war, or when war is imminent, i. e., when conditions are such that it is believed that war cannot possibly be avoided, all officers of the Officers' Reserve Corps are, of course, subject to the call for duty. This is to be expected, as each owes his duty and expects to fulfill his obligations to the country in this respect.

When called and assignments are made, it is the desire of the office to assign officers to duty according to their specialty. It can be readily understood that this plan can not in *all* cases be followed, as condition may arise that necessitate the assignment to a duty other than the specialty in civil life.

The Department is desirous that all officers of the Medical Reserve Corps transfer to the Officers' Reserve Corps, and we expect to maintain with the Reserve the same cordial relations as have existed in the past between the Surgeon-General's Office and the officers of the Medical Reserve Corps. The Surgeon-General wishes me to say that in accepting a commission in the Medical Section of the Officers' Reserve Corps. you are a medical officer of the Army—that you are not only in the Medical Department, but that you are of it.

H. P. BIRMINGHAM,
Colonel, Medical Corps,
Acting Surgeon General.

MEDICINE AND SURGERY—A NEW JOURNAL.

Dr. Philip Skrainka, of St. Louis, for six years editor of the *Interstate Medical Journal,* has severed his connection with that publication and, beginning this month, will edit a journal of his own, *Medicine and Surgery.*

Under his supervision the *Interstate* was not only a medical journal of unusual excellence but, also, it possessed a literary quality that made it distinctive.

With this editorship *Medicine and Surgery* cannot but have the same quality of literary elegance, and we may equally expect a high order of journalism reflected in the selection of contributed articles.

Surgical Suggestions

An "eczema of the navel" may be due to a discharging umbilical dermoid.

The modern tests of kidney function are of great importance, especially in determining the question of major operations upon the urinary tract; but they must be balanced with clinical findings and surgical judgment.

It is now well established in surgical experience that continued suprapubic drainage, relieving "back pressure" and obviating the distress of catheterization, will often so improve both kidney function and the general state that, after one or several weeks, prostatectomy may be safely performed upon an individual who would have promptly succumbed if it were attempted at the outset.

Surgical Sociology

Ira S. Wile, M.D., Department Editor.

MORTALITY STATISTICS.

Annually there are published compilations of mortality statistics which serve as the basis of constructive public health work, or are utilized in forceful arguments for economic advances.

The accuracy of mortality statistics naturally depends upon the thoroughness with which statistical data are secured from those reporting deaths. In the last analysis, the worth of valuelessness of mortality tables is determined by the carefulness of the physicians who filed the statements as to the causes of death.

The International List of Causes of Death has been accepted by this government, and it is necessary for physicians, throughout the country, to make use of the official nomenclature, in order to supply the basic information which permits of accurate classification.

While autopsy records may indicate a large number of pathological conditions, coordinately capable of causing death, the statistician assumes that each death must be charged to a single cause. Where several morbid conditions are recognized clinically, the physician must determine which is to be regarded as the primary cause of death and which may be satisfactorily deemed a contributory factor in the death. Herein, there is frequently considerable confusion, because the death certificate fails to

present an orderly statement of primary and contributory causes. Similarly, errors frequently occur from sins of omission of clarifying terms, which leads to inaccurate classification.

It is fortunate that the campaign of education, directed by the Bureau of the Census, has aroused state and municipal health officers to the importance of securing complete information on the death certificates filed. Death registration plays an important part in developing the history of the public health movement. Inadequate or ill-defined returns hamper and retard the growth of satisfactory vital statistics, and statistical inaccuracies tend to undermine confidence in the reports concerning death and invalidity.

It is a commentary upon our interest in the abstract phases of public medicine that national vital statistics still fail to cover in 1914 more than 66.8 per cent. of the total population and only 41.3 per cent. of the total land area of this country. While physicians are not able, at the present time, to push rapidly ahead into the fields, not at present covered in the statistical tables, it is possible for them to seek to make their personal returns correct and adequate in the information contained.

Surgeons should not report deaths from cancer, carcinoma, or malignant tumor without indicating the seat of the disease. Death from an operation or from surgical shock, or even from hysterectomy, is insufficient information as the basic cause leading to any one of these conditions must be recorded. Under the new list of causes of death, there is a distinction between accidents, suicides and homicide, so that a mere statement of gunshot wound, as a cause of death, is insufficient for the purpose of classification.

It is a marked tribute to the efforts at cooperation in the profession that the number of reports requiring clarification have been greatly reduced during the past ten years. Diagnosis is apparently more complete and the recognition of primary and secondary causes of death is clearer. This is evidenced in the fact that in the Mortality Statistics of 1914 the number of deaths from ill-defined diseases is only at the rate of 12.1 per hundred thousand population, while the annual average for 1906 to 1910 was 29.4, and for 1901 to 1905 was 47.8. This advance in accuracy makes it difficult to compare the recent figures for mortality with those of fifteen or twenty years ago. This difficulty is increased because of the alterations in terminology, incident to the adoption of the international classification.

A consideration of the mortality figures for 1904 points out a few interesting tendencies in the mortality rate. Homicide, for example, with a death rate of 7.3 in 1914, has risen from the average of 1906 to 1910 of 5.9, and the average of 1901 to 1905 of 2.9. Deaths from fractures, with causes not specified, have decreased from 8.5 (1901 to 1905) to 2.9 (1906 to 1910) to 0.6 in 1914.

While the average age at death is gradually increasing, it is noteworthy that senility itself is less frequently being certified as the cause of death. This is manifest in the fact that the death rate from old age in 1914 was 19.8 as opposed to 29, as the average for 1906 to 1910. This presents excellent evidence of greater refinement in diagnosis and the distribution of actual causes of death, during the later decades, to other parts of the statistical classification.

The increase in cancer, relatively and absolutely, has been recognized, and despite the constant endeavor to secure early diagnosis and operation, the mortality rate from this cause is slowly advancing, being 79.4 in 1914 as against 72.6 in 1906 to 1910. Possibly, part of this increase is due to greater accuracy in diagnosis, but inasmuch as the early detection of carcinoma is more certain today than during previous years, earlier operation results and there is a distinct gain as a result of postponed deaths. The mortality, nevertheless, from this cause has advanced.

Operations for appendicitis have become notably common, but despite the general ease in diagnosis and the highly specialized technic which has been developed, the mortality rate has not fallen, having been 12.3 in 1914 and 11.2 for 1906 to 1910.

Similarly, hernia and intestinal obstruction do not evidence the sharp decline in the death rate that would be expected, in the light of our present knowledge of these conditions. The drop from 12.9 in 1906 to 1910 to 11.7 in 1914 is hardly commensurate with the advance in our information of methods of diagnosis or skill in operative treatment. A better example of operative skill, in what would be termed "minor surgery," is to be found in the fact that during 1914 there were only 5 deaths from amputations, a decrease in the number of deaths from gangrene, and a marked falling off of deaths from tuberculosis of the lungs and the viscera. The increase of the death rate from ulcer of the stomach is probably due to more accurate diagnosis, than to an increase in the occurrence of the disease, or to the failure of prompt surgical intervention.

It is evident, from the recital of these few figures from the Mortality Statistics of 1914, that judgment is required to interpret their meaning and a satisfactory interpretation of the reasons for

changes in the character of the mortality rate is not possible without appreciating the changes in nomenclature and the more accurate registration of causes of death.

In order to raise the standard of the figures issued by the Bureau of the Census, every physician must realize, when filing a certificate of death, he is contributing a single isolated item to the vital statistics of the nation. He is offering his small share to the government in the interests of science and medicine, which is to determine the reliability and usefulness of the mortality statistics of the year. Preventive medicine seeks precise information and vital statistics should serve as the foundation for building up this branch of modern medicine.

Book Reviews

Recollections of an Alienist; Personal and Professional. ALLAN MCLANE HAMILTON, M.D., LL.D., F.R.S. Octavo; 416 pages; with original illustrations, photographs and facsimiles. New York: GEORGE H. DORAN COMPANY, 1916.

An extraordinarily active and varied life is revealed in these memoirs. Born of distinguished ancestry, through social and professional connections Hamilton came into contact with some of the more prominent personalities of the nineteenth century. He traveled extensively, and he recalls some of the most stirring incidents of the Rebellion and of post-bellum times. In his professional work he was identified with many of the conspicuous medico-legal cases of the post few decades. All these activities are recounted in a manner that shows the author to be a born teller of stories. Dr. Hamilton speaks his mind plainly, and is evidently a man of sharp opinions and prejudices. It is difficult to pick out any portion of the book that is more interesting than others, but to our choice the chapters on his earlier years in New York are perhaps the most fascinating. There is not a dull page in the book.

Syphilis. By LOYD THOMPSON, Ph.B., M.D., Physician to the Syphilis Clinic, Government Free Bath House; Visiting Urologist to St. Joseph's Hospital; Consulting Pathologist to the Leo N. Levy Memorial Hospital, Hot Springs, Arkansas; Member of the American Urological Association and the American Association of Immunologists. Octavo; 415 pages; 77 engravings and 7 colored plates. Philadelphia and New York: LEA & FEBIGER, 1916. Cloth, $4.25, net.

The predominant feature of this book is its practicality. The author is apparently a man of broad practical experience in syphilis, and knows how to present the important data upon the subject in an interesting manner. He emphasizes the diagnostic and therapeutic aspects of syphilis, while the pathological, experimental and more academic phases are touched upon more lightly. The presentation is didactic, systematic and precise. Numerous references increase the value of the text considerably, but the author does not keep himself too much in the background. Wherever possible his own views and large experience are set forth judiciously. The book is an unusually well written and valuable contribution.

Hay Fever, Its Prevention and Cure. By W. C. HOLLOPETER, A.M., M.D., LL.D.; Attending Physician, St. Joseph's Hospital; Pediatrician to the Philadelphia General Hospital; Professor of Pediatrics, Emeritus, Medico-Chirurgical College, etc. Octavo; 347 pages; 5 illustrations. New York and London: FUNK AND WAGNALLS COMPANY, 1916.

This treatise, which covers the subject of Hay Fever quite at length, is a book that is perhaps rather for the laity than for the medical profession.

The author divides the work into three parts. In the first and second parts, the titles of which are "What Hay Fever Is" and "Accepted Causes," he reviews the various theories of the etiology of the condition. In the last part of the book, "Forms of Treatment," the different methods are discussed and the author's own methods are explained. The sections on the special therapeutic methods are handled by different writers.

Medical and Surgical Reports of the Episcopal Hospital, Philadelphia. *Volume* III. Octavo; 356 pages; illustrated.

This volume, edited by Astley P. C. Ashhurst, represents a high grade of scientific hospital work. It contains many intresting articles, several of them reprinted from medical journals.

Books Received

Aseptic Surgical Technique. With Especial Reference to Gynecological Operations, together with Notes on the Technique Employed in Certain Supplementary Procedures. By HUNTER ROBB, M.D., F.A.C.S., formerly Professor of Gynecology, Western Reserve University and Gynecologist-in-Chief, Lakeside Hospital, Cleveland, etc. Fifth Edition. Duodecimo; 292 pages; illustrated. Philadelphia and London: J. B. LIPPINCOTT Co., 1916. $2, net.

Surgical and Gynecological Nursing. By EDWARD MASON PARKER, M.D., F.A.C.S., Surgeon to Providence Hospital, Washington, D. C., and SCOTT DUDLEY BRECKENRIDGE, M. D., F. A. C. S., Gynecologist to Providence Hospital. Duodecimo; 425 pages; 134 illustrations. Philadelphia and London: J. B. LIPPINCOTT Co., 1916. $2.50, net.

Anleitung Für Die Kriegschirurgische Tätigkeit. Von PROF. DR. LOTHAR DREYER, Leiter der Orthopäd. Abteilung und Oberarzt an der chirurgischen Universitaäts-Klinik in Breslau. 12mo.; 158S; 132 Abbildungen. Berlin: VERLAG VON S. KARGER, 1916.

Constipation, Obstipation and Intestinal Stasis. By SAMUEL GOODWIN GANT, M.D., L.L.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum, and Anus in the New York Post-Graduate Medical School and Hospital. *Second edition.* Octavo; 584 pages; 259 illustrations. Philadelphia and London: W. B. SAUNDERS COMPANY, 1916. Cloth, $6.00, net.

Oral Abscesses. By KURT H. THOMA, D.M.D., Lecturer on Oral Histology and Pathology and Member of the Research Department of Harvard University Dental School; Instructor in Dental Anatomy, Harvard Medical School; Visiting Dental Surgeon to the Long Island Hospital, Consulting Oral Surgeon to the Boston Dispensary. Octavo, 213 pages. Boston: RITTER & COMPANY, 1916.

Progress in Surgery

A Résumé of Recent Literature.

Wounds in War and Methods of Treatment. A. U. DESJARDINS, Waterville, Maine. *Journal of the American Medical Association,* January 6, 1916.

During the first six weeks of the war the battles were in the open, but after the battle of the Marne, trench warfare has been the rule. The conditions of moist climate and intensive cultivated soil are ideal for infection of wounds, and to this must be added the necessary delays, which were more marked in the beginning, and have caused complications very difficult to meet. In spite of these, however, at the present time, many of the field hospitals at the front are equipped with every essential. The rush of cases at times is very great. A French surgeon at the Somme front, in charge of a field hospital of 2,000 beds, had 600 wounded pass through his hands in thirty-six hours. Another working behind the Verdun front had, with his associate, to perform 400 operations under shell fire in an underground ambulance on the front line. At the first dressing station no operations were performed. The wounds are examined and dressed both with a view to the cleanliness and comfort of the patients, who are sent back to the nearest field hospital where they are given one or more doses of tetanus antitoxin. The wounds are explored and drained, accessible foreign bodies removed, fractures temporarily splintered, and all patients in condition for it are transported by motor ambulance to the nearest evacuation hospital, where needed additional treatment is given, and then sent as soon as possible by train to the base hospitals at Paris or other cities. During the first weeks of open fighting the number of bullet wounds was comparatively high, but since that time a large proportion of the wounds have been caused by shells, shrapnel, bombs or grenades. Bayonet wounds are rarely seen, because, inflicted at close quarters, they are generally fatal. The effect of the rifle bullet depends largely on the distance from which it has been fired. The frequency of explosive effects observed in such wounds received in the trenches is accounted for by the short range. There may have been isolated instances in which the German soldiers have reversed the bullets to produce greater destruction, but such are not necessary to explain the explosive effects. At short range extensive shattering of large bones is produced by the bullet, and fragments are driven through the surrounding soft parts.

Clean perforations of bones are rarely seen. Shell fire is largely of two kinds, shrapnel and high explosive. The latter is far the most destructive, innumerable jagged fragments being forced through the tissues, and one of the worst features is that these tear off pieces of clothing and carry them into the deepest portions of the tissue. The sudden violent explosion of one of these shells also causes more or less shock, which is sometimes fatal. Bombs, grenades and torpedoes are of many kinds, and exploding in the trenches in the confined space they are particularly vicious, though they do not generally produce the extensive ravages produced by high explosive shells. The general infection of all the wounds may be of many kinds. Tetanus is not so frequent as at first, but the dreaded gas infection is still one of the problems of military surgery. He describes this complication, and the type of wound in which the rapidly spreading form is observed is the deep wound in which the projectile, instead of widely tearing the muscles apart, has lodged in some muscle mass, as in deep wounds of the thigh. The infection may be so intense as to overwhelm the patient in a few hours. If a soldier could keep relatively clean and could be taken at once to a well equipped hospital and cared for, the results would be better than under the condition of dirt and delay which are inevitable in this war. To combat the infection is the principal problem, and Desjardins reviews the theories and methods of Dakin, Carrel and others. He says, however, that no one method is applicable to all. The first indication is thorough exploration of the wound, removal of foreign bodies, excision of sloughs and ample drainage. At this stage continuous irrigation is of distinct value because it dilutes the discharge and facilitates drainage. The use of antiseptic solutions is advised if the wound is one that can be thoroughly made accessible to their action, in which case it does not seem to make very much difference which one of the number of antiseptics is used. At Ris-Orangis different antiseptic solutions were used on different squads of patients. There seemed to be no great difference in the power of the different antiseptics when the wounds were properly drained, but they did show that continuous irrigation should give way to dry dressings after the acute suppuration had subsided. Prolonged continuous irrigation seemed to produce edematous flabby granulations and retard the healing process. Badly comminuted fractures, complicated by infection, should be thoroughly drained and all loose detached pieces of bone removed, but pieces not thoroughly detached should be left in place. Proper treatment of fractures and bone injuries is an important part of the work of the military surgeon, and he speaks particularly of the value of the work of Drs. Joseph A. Blake, and Flint of New Haven in the use of the suspension method. Amputation should be a measure of last resort. The importance of after-treatment has been thoroughly recognized by French surgeons, and large hospitals have been devoted to it. The plastic restoration of substance in the soft parts is another important phase of military surgery, and he mentions especially the work of Morestin at the Val De Grace in Paris. The treatment of gas infection depends on the stage of the disease when first seen. If there is only a limited amount of distension, the first indication is to lay open the infected area by multiple free incisions and remove all foreign material. After ample drainage has been provided for, continuous irrigation may be tried, but if the gas crepitation continues, the limb should be removed at once. If the infection is located in the thigh, the limb should be amputated at or near the hip bone. Subfacial injections of oxygen gas or peroxid have not given encouraging results. "The greatest lesson to be learned from the surgery of this war can be summed up in two words, 'intelligent conservatism.'"

Disinfection of War Wounds by the Carrel Method, as Carried Out in an Ambulance at the Front. H. H. M. LYLE, New York. *Journal of the American Medical Association,* January 13, 1917.

The basis of the treatment is the sterilization of the wound by a suitable antiseptic reaching every portion in a sufficient concentration for a period long enough to destroy the infecting micro-organisms. The chemical destruction of the micro-organisms depends on the difference of the resistance existing between the tissues involved and the bacteria. The Carrel method enables us to secure this. The antiseptic employed is Dakin's sodium hypochlorite, 0.5 per cent. It is an ideal isotonic wound antiseptic of high bactericidal activity and low toxic or irritating quality. The latter feature distinguishes it from Javelle water, Labarraque's solution, etc. The commercial hypochlorites are of inconstant composition, and generally contain free alkali or free chlorin. They are therefore irritating and not to be used. Dakin's solution properly made has the great advantage of being able to dissolve pus, old tissue débris and blood clots, while the living tissues resist. The thoroughness of the first surgical aid is most important, and it should consist in a thorough, mechanical disinfecton and cleansing from all dirt and foreign substances. The operative field is painted with tincture of iodin, and bruised and necrotic skin edges trimmed away with a sharp knife, which is then laid aside. Fresh instruments are then used to lay the wound open like a book, and it is gently explored for shell fragments and clothing shreds, etc. Gentleness of manipulation is the keystone of the technic, and any rough handling or bruising is a crime. To avoid overlooking blood stained and encrusted débris, fragments of bone, etc., the same minute and careful technic is used in bone wounds as in the soft parts. A careful revision of the wound is

made and particular attention given to perfect hemostasis, which is necessary with Dakin's solution, which has the power of dissolving blood clots. Next the instillation tubes are placed in the wound so that the liquid will come in contact with every portion. A thin layer of gauze is placed over the wound and around this the required number of tubes, secured to the wound edges by a rubber cuff and suture, or a two-way tube is used. Details are given by Lyle as to the necessary placing of the tubes. In the simple type of penetrating wounds a tube without lateral perforations is introduced to the depth of the cavity and the solution allowed to well up from the bottom. In a large tract terminating in a cavity with irregular collapsible walls, a little gauze is introduced to support the walls of the cavity and allow a more thorough penetration of the fluid. Penetrating wounds with the point of entrance in a dependent position (as the buttock, posterior surface of the extremities, and the back) are treated with perforated tubes dressed with toweling. These dressed tubes keep the antiseptic in contact with the wound. A suitable nonperforated tube can also be used. In through and through wounds, a perforated tube with the tied extremity uppermost is passed from the lower to the upper wound. The liquid, escaping through the small lateral holes, flows back along the tract to the inferior orifice, moistening the entire wound. Wounds of the hand or foot, open amputation stumps, etc., are immersed in Dakin's solution for from ten to fifteen minutes every two hours until the wound is sterilized. The skin is protected by smearing it with sterile yellow petrolatum. The gloved hands are never allowed to come in contact with the wound in dressing. The instillations of the fluid are made every two hours by releasing the adjustable clamp controlling the flow, the amount being governed by the needs of the case. When the wound has become sterile the tubes are removed and the compress moistened, and Dakin's solution applied. Formerly a continuous instillation was used. Once a day or oftener careful inspection of the wound and dressings and flow is made. Flushing the wound shows if the solution is being delivered as planned, but there is not a continuous irrigation, only a mechanical attempt to deliver a definite chemical antiseptic to every portion and to insure its contact for a prolonged period. To protect the skin from the liquid, gauze impregnated with yellow petrolatum is applied to the skin surfaces below the wound. Regular determination of the number of microbes on the wound surfaces is made by transferring on a standard loop a portion of the secretion to a slide and a count of the number of microbes in the field every second day, record being made. Absence of microbes from the wound for three successive days is considered to indicate sterilization of the wound. It is best to begin the bacterial chart one or two days after reception of the patient. Wounds of the soft parts are sterilized in from five to eight days, while greatly traumatized wounds and fractures require a considerably longer period. All bone sequestrums must be, of course, removed. When the wound has been shown sterile for three days it is closed by careful layer sutures, and for extensive wounds traction strips are used. Details of the routine method at Hospital B, American Ambulance, are given, and the results of the Carrel method were most favorable. The immediate complications became rarer and suppuration almost entirely disappeared. Lyle's summary is given as follows: "The Carrel method is not a continuous irrigation. It is not dependent on the miraculous power of an antiseptic, or on any one feature of the method, but on the combination of the whole. It is a method of sterilizing wounds by mechanically delivering an antiseptic of definite chemical concentration to every portion of a surgically prepared wound and insuring its constant contact for a prolonged period. The progress of the sterilization is rigorously controlled by the microscope. Gentleness, thoroughness and attention to detail are essential for success. I firmly believe that the adoption of this method is destined to save many lives, to reduce the gravity of the mutilations, and allow the rapid return to the front of many men who would otherwise be lost to the service of their country."

Obstetric Surgery. E. P. DAVIS, Philadelphia, *Journal of the American Medical Association,* October 14, 1916.

Obstetrics has been the last department to share in the general advance of modern medical science, but a considerable gain has been made in reducing the mortality and morbidity of parturition by the application of modern surgical principles. He reviews generally the history of the development of modern obstetric surgery which dates, he says, from the perfection of the classic Cesarean section when Saenger accurately closed the uterine muscle and peritoneal covering separately. This reduced the mortality and morbidity of the classical section to a rate corresponding to that of other abdominal operations. Next came the observation that patients infected during labor became so through repeated examinations after the membranes had ruptured, conveying bacteria from the vagina into the uterus. Especially dangerous are unsuccessful attempts at delivery, bruising and lacerating of tissue. When it was learned that internal examinations should be made as rarely as possible, that diagnosis during labor should be made by palpation, auscultation and pelvimetry, and that attempting vaginal delivery during labor is a serious matter, the patients were brought to section with corresponding good results. There is still a remnant of bad practice in the attempts sometimes made to deliver the unengaged head by the forceps. The views as regards the organisms living in the vaginal passages have been improved and it is realized that pathologic bacteria are liable to be found there. While obstetric surgery aims to obviate the dangers of contracted pelvis and to deal successfully with infectious foci or pathologic conditions of the pelvis or abdomen and to repair unavoidable injuries, it does far more for the child, not only saving its life, but also saving it from injuries to the nervous system that may compromise its future. Davis goes over the conditions in which surgery is called for and he asks, Do the results of modern obstetric surgery justify its existence? It is hard to estimate the maternal mortality of labor outside of institutions, but it is fair to say that it is a fraction of 1 per cent. under favorable conditions. The mortality of spontaneous labor for the child is the mortality of asphyxia. Under the general head of birth pressure also fetal mortality may result from visceral hemorrhage. As regards the fetal mortality in classic Cesarean section Davis holds that it is the most certain method of delivering a living child which exists. The high maternal mortality by the older methods of artificial delivery was about 1 or 2 per cent. and the fetal mortality following the use of forceps varies according to the mode of application. In low forceps operations at the Sloan Maternity it was approximately 10 per cent., in high operations 38.5, and the general average was 14.5 per cent. The subsequent history of the child as traced by Gaans in the Konigsburg Clinic showed instances of damage affecting future life in a certain number of cases. The fact that version and contraction are followed by a comparatively high mortality makes it difficult to compare it with the Cesarean section. Davis believes that the development of laboratory work and the use of so-called instruments of precision have led to the neglect of clinical observation and thorough studies of cases by the senses only. We rely, it would seem in his opinion, rather too much on bacterial cultures for a knowledge of the conditions of the patient than on our powers of observation. The most important essential limitation in modern obstetric surgery is the choice of those who shall practice it and practical experience is the basis of all sound judgment in deciding whether to operate and the best method of operation. The opening of maternity wards and the multiplication of hospitals will, he thinks, with the better training of medical students, produce more skilled obstetricians capable of properly performing modern obstetric surgical operations.

Pelvic Infections in Women: Comments on Some Special Pathology with Application to Treatment. THOMAS J. WATKINS, Chicago. *Journal of the American Medical Association,* October 7, 1916.

Since it has become known that infections, especially severe ones, are chiefly general and that recovery is

largely due to systemic immunization, important advances have been made in treatment. The inflammatory exudate is no longer regarded as a destructive element, but as a conserving one. Occurrence of abscesses, especially in puerperal cases, has little bearing on the severity or duration of the infection. In non-puerperal cases the relation of suppuration to the infection is quite different, as in these cases the infective process extends along the mucosa, excites an increased secretion, and when it involves the fallopian tubes, generally produces abscesses. In one case the infection travels along the blood and lymphatic vessels and in the other a continuity of tissue, except for the bacterial invasion, which occurs in both, but more actively in the puerperium. Pelvic infection involving the peritoneum is especially favorable to the development of immunity, as the early and extensive inflammatory exudate confines some of the infective discharge and acts favorably in its destruction. Pelvic exudates, as a rule, spontaneously becomes sterile, probably due to the active reaction that takes place in infection of the pelvic peritoneum. In the puerperal case, in the absence of the localized reaction, the immunity must be mostly or entirely general and in all acute cases of pelvic infection generally immunity is probably the most important curative factor. The treatment of acute and chronic infection offers two very different problems, one deals directly with the infection, the other chiefly with its results. No specific serums or vaccines have been found for pelvic infections, diphtheria and syphilis excluded. The treatment, medical and surgical, during the acute period, is limited to aiding the defensive forces of the body. Fresh air treatment is among the most important of these, much more so than in tuberculosis. The importance of rest, sleep, food, elimination and general hygiene cannot be too much emphasized, and keeping the patient cheerful is also highly recommended. Unnecessary pain, fear and worry interfere with all other treatment. Watkins' limited experience, he says, has led him to believe that blood transfusion is very valuable in selected cases, notably in very severe, peurperal infections. In the absence of apparatus or of an experienced operator, the whole blood can be easily and effectually given subcutaneously. Recent investigations on the action of protein substances suggest their being of value in increasing body resistance. He considers that a treatment of nearly all puerperal cases should be entirely medical and that surgical procedures are usually more injurious than helpful. Mortality and morbidity have been much less since his treatment has been less surgical, and he has ceased to fear the result in puerperal infections unless they are very virulent. The treatment of nonpuerperal infection during the acute period is also chiefly medical, but in very rare instances surgical interference is indicated. Curettage, which was formerly practical largely, is not in accordance with modern knowledge and is unnecessary, and incision and drainage of inflammatory exudates is a problem for judgment in some individual cases. In his experience he has gradually lessened the number of his operations of this kind. He believes that incision and drainage should usually be limited to patients with large superficial fluctuating abscesses which can be quickly opened with local or light gas anesthesia without much disturbance to body resistance. Abdominal section is required only in exceptional cases of pelvic infecton. Inflammatory exudates may produce intestinal obstruction and call for surgical interference. Acute appendicitis complicating pelvic disease should be operated on without delay, and intestinal obstruction from exudates and tumors with twisted pedicles may necessitate interference. Suppurative and some degenerative fibroid tumors require early operation, as in many of these cases the immunity does not develop and delay exhausts the patient.

Recent Progress in the Treatment of Uterine Cancer. J. H. JACOBSON, Toledo. *Journal of the American Medical Association,* October 21, 1916.

There are two factors that contribute to the belief that cancer of the uterus can be cured by other than surgical means. These are: first, its tendency to remain localized in the pelvis with metastasis only in the later stages, and second, the difference in malignancy of cancer in certain parts. Cancer of the fundus (adenocarcinoma) is the least malignant, and cancer of the cervical canal is the most malignant. Cancer of the portio vaginalis stands midway between the other two types as regards malignancy, and results of operation or any other treatment of cervical cancer are as a rule unfavorable. There are three methods of treatment that have obtained favor. One is the Wertheim radical abdominal method. Another is Svhauta's extended vaginal operation, which seems to have its special indications in obese women. Third is the heat operation of Percy which has much to recommend it in otherwise inoperable cases. The rapidly increasing literature of radiotherapy in cancer treatment reveals the fact that a new era is at hand in the treatment of uterine cancer, and it seems certain that the destruction of cancer cells is possible by the Roentgen ray. Taking all the methods into account, the best results seem to be obtained by surgical measures, especially the radical abdominal method, and the importance of early treatment is emphasized by Jacobson. He summarizes his article as follows: 1. In early or operable cases of uterine cancer, the best results are obtained from radical abdominal operation. 2. Owing to the difference in malignancy of uterine cancer, the type of cancer present should be determined whenever possible. Cancer of the vaginal portion and of the body of the uterus should be treated preferably by operation. 3. What shall be done with the borderline cases is to be determined by the operator's judgment, and his experience with the radical abdominal operation. 4. Until radium, Roentgen ray, or Percy's operation shall have proved their superiority to established methods of surgical treatment, their use should be restricted to the inoperable cases. 5. A combined form of treatment, that is, operation with radiotherapy, is a method of demonstrated value. Systematic irradiation with Roentgen ray or radium should follow every palliative or radical operation for uterine cancer.

Operative Treatment of Fibromyomatous Uterine Tumors. JOHN B. DEAVER, Philadelphia. *Journal of the American Medical Association,* October 21, 1916.

We have outgrown the older ideas as to the harmlessness of uterine fibromas and also the idea that if a woman could be tided along to the menopause it could be expected that the fibroids would then shrink and cease from troubling. He does not think that the treatment by the Roentgen ray that has been so much advocated has proved its worth. We all hoped for a time that an absolutely safe and specific remedial agency was in our reach. Now we have the claims of radium, and while Deaver is willing to grant that it has a certain direct effect, this is not specific. The Roentgen ray and radium have both a pronounced influence over malignant growths, but he nevertheless considers it malpractice to use either in any case amenable to excision. Both methods are slow and expensive and he concludes that operation, by which the patient is rid completely and finally of the growths and associated pathology, remains the ideal treatment. The operation of choice, in his opinion, is supravaginal hysterectomy. An exception should be made when the cervix is distinctly abnormal by reason of lacerations, ulceration, or inflammatory conditions, when the whole organ should be removed. Ovaries should always be left unless diseased, especially in younger women, when one ovary or a portion of it should be left unless the condition makes it dangerous to do so. It is his practice to fix the round ligament and the stump of the other portion into the cut surface of the cervix or, in the case of panhysterectomy, to the vagina on each side. Myomectomy is seldom advised, as the tumors are usually multiple and when single are apt to be so large as to render hopeless any attempt to save a functionally sound uterus. Occasionally in the case of young women it is justifiable, but it is well to remember that it may be a more complicated or dangerous operation than removal of the uterus. At times the operation of hysterotomy may come in service. It is impossible always to distinguish between a pregnant uterus and one symmetrically enlarged by a myoma. It is possible also by this method sometimes to expose a small bleeding polyp of submucous myoma. Deaver considers the operation for the fibroid tumor of the uterus one of the most satis-

factory in all surgery. When cure is indicated, symptomatic treatment has no place.

A Report of One Hundred Consecutive Cases of Fibromyomata Uteri Subjected to Operation. STEPHEN E. TRACY, Philadelphia. *Journal of the American Medical Association,* October 21, 1916.

Tracy says that criticism has frequently been made as to the lack of a life history of operated cases of fibromyomas. He has therefore made an effort to obtain recent reports of the conditions in these cases, but in a few this has been impossible. If the patient, six or more months after operation, shows a good general condition and freedom from symptoms, it is considered a cure and so recorded. The recent reports were obtained by letters from patients, personal interviews and from the family physicians. Tracy analyzes 100 cases. In thirty-one of these malignant conditions existed at operation, a larger proportion than usually reported. It is known that cancer is on the increase and surgeons are more generally using the microscope and laboratory research. We will therefore expect to find malignancy associated with the uterine fibromyomas in a larger percentage as time goes on. In this series of 100 cases, sixty-four were over 40 years of age, and he also quotes the statistics of others as regards the matter of age. Only nineteen of the 100 had no associated lesions of the abdominal or pelvic organs and no change in the tumors. In fifty-six cases there were surgical lesions in the abdomen and pelvis also. Of the 100 patients, sixty-three were married, eleven were widowed, and twenty-six were single. Of the seventy-four who were or had been married, 72 per cent. had borne children. The surgical procedures in these cases were: sixty-four supravaginal hysterectomies, twenty panabdominal hysterectomies, one vaginal hysterectomy, nine abdominal myomectomies, and six vaginal myomectomies. In every case of known malignancy, suspected malignancy and extensive cervical laceration, a panhysterectomy was done unless contraindicated. The primary mortality was 2 per cent. One patient had recovered from the operation but was still in the hospital taking medical treatment and so was counted; the other was doing well, but died from double pneumonia. In viewing the results of hysterectomy, one of the most important factors from the patient's standpoint is the amount of suffering from the artificial menopause. Careful examination as to this point and the severity of the symptoms has been made. In seventy-two patients the menstrual function was still active. Of these, forty-eight patients had no menopause symptoms. In 77 per cent. of all the cases the disturbances from the artificial menopause varied from no symptoms to mild discomfort. Of the twelve patients in whom one or both ovaries were allowed to remain, ten have been traced. In five there were menopausic symptoms. In two they were very mild, one moderately severe, and in two the symptoms were marked. Both of these were neurasthenics before the operation. In doing hysterectomy in a patient with active menstrual functions, a perfect ovary should probably be allowed to remain, but should be so placed and anchored that it cannot lie on the bottom of the pelvis and cause pain. In patients past the age of 49 years, Tracy says it makes but little difference whether they are removed or not. Of the eighty-nine patients who could be located, eleven are dead, the causes being acute mania, recurrent malignant disease, renal disease, and pneumonia. Other details are reported, but he lays special emphasis on the percentage of malignancy and the necessity of operating. No surgeon will deny, he trusts, that there is an intimate relation between fibromyomas and cancer of the corpus uteri. He cannot refrain from asking the advocates of radiotherapy, who talk about the control of bleeding as a cure, what they would hope to accomplish in the way of relieving these patients by the Roentgen-ray treatment when there are only nineteen patients in this series who had neither a malignant disease in the pelvic organs, a degeneration of the tumor, nor an associate abdominal lesion. While he admits that Roentgen surgery may help in a small percentage of cases, he still maintains that all fibromas which produce symptoms should receive early surgical treatment.

Syphilis of the Stomach. A Clinical and Roentgenological study, with a report of 23 cases. G. B. EUSTERMAN, Rochester, Minn. *American Journal of the Medical Sciences,* January, 1917.

1. Syphilis of the stomach, though rare, is not as infrequent as is generally supposed. The aid of the Wassermann-Noguchi reaction and roentgen rays are necessary to establish the presence and the specificity of the lesion.

2. Denial of the disease, lack of evidence pointing to a primary lesion, or absence of positive Wassermann reaction does not exclude the possibility of gastric syphilis.

3. The diagnosis is based on a history of infection, a consistent positive Wassermann reaction, undisputable evidence of a gross gastric lesion, and—excluding cases showing irreparable extensive disease—a permanent cure by purely antisyphilitic measures. The diagnosis is often accidental. The possibility of syphilis should be considered in every atypical case, or in those not responding to ordinary methods of medical management.

4. The symptomatology which is fairly characteristic of gastric syphilis in view of the cases reported herewith, is suggestive of benign gastric ulcer; the gastric chemistry and roentgen findings rather suggest carcinoma. The average age of patients with acquired syphilis of the stomach is about 35; the duration of the complaint averages 3 years. In most instances the condition is characterized by an initial intermittent course, followed soon by continuous symptoms and associated with epigastric pain of variable degree, felt shortly after taking food and not relieved by food or alkalies. From the outset there is a tendency toward emesis, a variable degree of flatulency, good appetite, infrequency of hemorrhage and palpable tumor, diffuse abdominal resistance, a progressive course, and marked loss in weight without cachexia.

5. Anacidity or achylia is characteristic of the majority, if not of all, cases of actual gastric syphilis. This can be explained by the influence of the pathological process upon the gastric mucous membrane.

6. Extensive gastric involvement is frequently present at the time when gastric disturbance first becomes manifest.

7. A gummatous ulcer, usually multiple, and especially a diffuse syphilitic infiltration with variable degree of contracture (fibrous hyperplasia), thickening, deformity, and perigastric adhesions chiefly involving the pyloric segment, is the usual pathological condition. Demonstration of the presence of Spirocheta pallida in the resected tissue would be final proof of specificity.

8. Results from antispecific treatment are encouraging in all but very advanced cases. Surgical interference is indicated in certain cases. Early diagnosis and intensive treatment invariably result in symptomatic cure and structural improvement.

Splenectomy in Splenic Anemia, Hemolytic Jaundice and Hanot's Cirrhosis. J. L. MILLER, Chicago. *Journal American Medical Association,* Sept. 2, 1916.

Miller discusses the advantages of splenectomy in splenic anemia, hemolytic icterus, and Hanot's cirrhosis. The value of the operation in splenic anemia is now unquestioned. The other two conditions have much in common with it and have no doubt been frequently confused with it in the past. In all three conditions there is an enlargement of the spleen, chronic anemia, or chronic icterus, or both. Evidence of obstructive icterus is always lacking. While typical hemolytic crises occur only in hemolytic icterus, sudden increase in anemia is not infrequent in Banti's disease. Hemolytic icterus may be definitely hereditary and often familial. This is less often the case in splenic anemia, but it occurs. Chronic jaundice is constantly present in hemolytic icterus and Hanot's cirrhosis, but it is rare in splenic anemia. The chief point of difference in the three conditions is the lowered resistance of red corpuscles in hemolytic icterus. This finding, however, is not constant. All the symptoms are compared, and it is at present impossible to explain why in

Hanot's cirrhosis there is icterus without anemia. In splenic anemia there is anemia without icterus, and in hemolytic anemia there is both anemia and icterus, though often icterus is not dominant. The classification of all splenic tumors under a general head of splenic anemia may be desirable, Miller thinks, from a therapeutic point of view, as the vast majority of patients with so-called splenic anemia have been cured by splenectomy. In the early stage of the disease the results are excellent. Mayo had only 11 per cent. mortality in eighteen cases in which he operated by splenectomy, which is the lowest record, but is not discouraging, as it is the only means offering hope of cure. In hemolytic icterus the patient suffers less except from the effect on his appearance, and Türk has referred to it as simply as a cosmetic disturbance. The degree of inconvenience should be seriously considered in suggesting operation for this condition, as it has certain dangers. Hanot's cirrhosis is a rare disease, but from its resemblance to the other two conditions it is not surprising that splenectomy should relieve it, and Eppinger and Mayo have reported cures. So far as Miller has found, these are the only reported cases; but it would appear probable that in Hanot's cirrhosis, which has heretofore been considered incurable, splenectomy was also indicated.

A Consideration of Some of the Maladies in Which Splenectomy May be Indicated. W. J. MAYO, *Lancet*, November 25, 1917.

Mayo reports 135 splenectomies with 12 deaths. He believes that splenectomy is curative in splenic anemia and hemolytic jaundice. It may be curative in certain as yet little understood conditions which are confused with pernicious anemia, leukemia and cirrhosis of the liver. Splenectomy is of value in certain types of parasitic splenomagaly, notably, malaria and syphilis. It is of value for the palliation of certain types of pernicious anemia. In portal and biliary cirrhosis associated with splenomagaly, splenectomy may have a field of usefulness, but the experiences so far are insufficient to permit of definite data being drawn. In true leukemia, splenectomy is of no avail.

Volkmann's Ischemic Paralysis and Contracture. ALFRED S. TAYLOR. *Annals of Surgery*, January, 1917.

Clinical and experimental data point to a traumatic myositis as the main cause of Volkmann's ischemic contracture. The degree of muscle impairment varies with the amount of pressure exerted upon the muscle and its consequential degeneration with its subsequent fibrosis and almost constant contraction.

The likely complications are pressure sloughs and abscesses, nerve injuries, either primary or secondary (the latter are more frequent), and deformity.

Prognosis is unfavorable as a rule. The damage done may be much greater than can be estimated at first hand.

Treatment should aim at prevention. All injuries in children, particularly, should not be bandaged too tightly, and extreme angles of immobility should be avoided. When the contr cture has occurred and when seen early, the dressing is to be removed at once, the limb elevated, and gentle passive and active massage instituted. If this is of no avail the deep aponeurosis of the flexor muscles is to be split longitudinally. However, if the condition is not observed early the operation may have to relieve the prominent deformity before any real rehabilitation of muscles can take place. Physical therapeutics combined with a method for mechanically overstretching the contracted tissues may give results better than those obtained by operation. The Jones method of rigid splints and the author's method of traction are especially valuable for treatment.

The Treatment of Fracture of the Spine. NORMAN SHARPE, New York. *American Journal of the Medical Sciences*, December, 1916.

Sharpe does not believe that the conventional temporizing method of treatment of fracture of the spine is correct. He holds that early operation in all cases that show a cord lesion is indicated for the following reasons:

1. Relieves pressure from cord whether due to depressed bone or blood clots.

2. If fracture dislocation, allow cord ample room, relieving pressure effects of angulation.

3. Provides drainage of the certain edema, which by its compressive effects is destructive to the nerve fibers.

4. Allows for drainage of hemorrhage, if present, the compressive effects of which may be so great as to permanently damage the cord.

5. In skilled hands, laminectomy is not a difficult or dangerous operation, and by doing it early the surgeon has given the damaged cord the best possible chance for repair.

If the cord is found completely severed at operation, Sharpe believes suture should be attempted, for the reason that he has found that the patient suff .rs less from trophic disturbances than if suture is not done. The only contraindication to operation for fracture of the spine is in cases in which evidence of crushing is so apparent that a complete destruction of the bony canal is present.

Excision of the Knee Joint as a method of Treatment for Severe Infections. A. FULLERTON, *British Medical Journal*, November 25, 1916.

The older methods of treatment of severe infections of the knee joint by incision and drainage have proven highly unsatisfactory in the war zone. Fullerton recommends as a substitute extensive excision of the joint with maintenance of the separation until the septic infection has been controlled. Then the divided ends of the bone are permitted to come together. The advantages of the excison are that all the various pockets in the knee joint are eliminated so that drainage is easy. Fullerton has operated 64 cases by this method, of which 6 died of the latter. four died following an amputation that was necessary owing to the failure of the excision. Amputation was necessary in 13 of the cases.

The Importance of Proper Dosage of Sodium Citrate in Blood Transfusion. RICHARD LEWISOHN, New York. *Annals of Surgery*, November, 1916.

Lewisohn points out that the use of the minimal dosage (0.2 per cent.) of sodium citrate as a simplified method for blood transfusion is free from all toxic effect of the drug, and serves as an adequate method for the prevention of coagulation during the transfer of blood.

He shows that doses above 0.2 per cent. are likely to produce toxic and injurious effects when introduced into the circulating blood of the recipient. Weil used 1 per cent. sodium citrate, but in Lewisohn's experience this dose is excessive, and he quotes Brem to the same effect.

In a comparison of Lewisohn's method with the direct tranfusion methods of Unger, Lewisohn found both methods clinically equally beneficial. No untoward effects need be encountered if 0.2 per cent. sodium citrate be used in the blood transfusion.

Experimental Bone Tuberculosis. NATHANIEL ALLISON and ROLAND F. FISHER, *The American Journal of Orthopedic Surgery*, November, 1916.

Employing dogs, these authors were able to demonstrate that it is possible to establish experimental foci of tuberculosis in any region of the bones, i. e., epiphysis, metaphysis, diaphysis, cortex of the shaft, and joint surfaces—any or all of these may be involved.

No essential differences in the reaction of the tissues to the human or the bovine type of tubercle bacillus was observed. They made out that when there are elements that lend themselves readily to new bone formation, then the tuberculosis process develops a proliferative response resulting in the upbuilding of new bone.

From their work it seems clear to the authors that there is no essential difference in the reaction to tuberculous foci between spongy or cancellus bone or compact cortical bone except that in the latter bone proliferation plays an important part.